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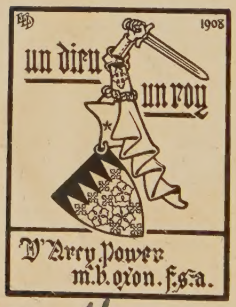

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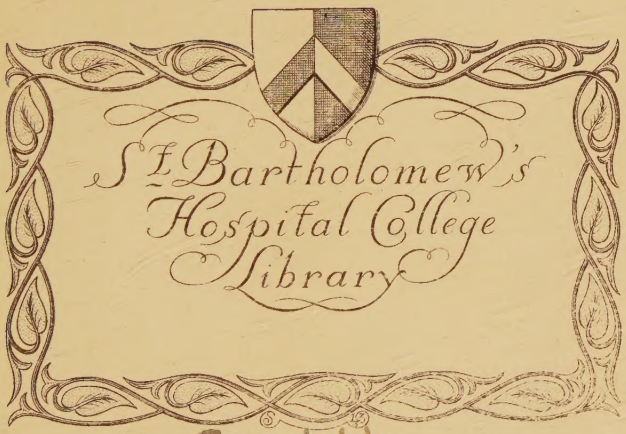

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CHRONOLOGIA MEDICA

A HANDLIST OF PERSONS, PERIODS AND EVENTS

IN THE

HISTORY OF MEDICINE

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BY

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FOREWORD.

It has been our endeavour in the following pages to present a handlist of the chief persons, periods and events in the history of the healing art from traditional times far back in the mists of antiquity, onwards through the ages to the present time.

The importance of dates and periods to the student of the history of medicine is obvious. They help to memorize the names of those who made the discoveries forming the milestones in the march of progress which have raised medicine to its present position.

In the traditional period chronology is largely conjectural, accuracy is often impossible : dates must necessarily be approximate, and discrepancies, sometimes of thousands of years, occur between epochs about which we can only guess : such as are instanced in the accounts of many physicians and surgeons in Greek and Roman times. The date, therefore, at which a physician flourished is only obtained with difficulty, unless he was so distinguished as to have found a biographer. In many cases he was attached to the court of a monarch or he may have been the master or pupil of some distinguished personage whose epoch is known, and from this his period may be determined.

The works of many of the older and even the most celebrated physicians have been entirely lost and their names alone remain with a few facts about their teaching or practice. But in most cases the writers of antiquity were industrious copyists, commentators and even gross plagiarists. They have interpolated in their own writings long passages and sometimes whole treatises of their predecessors, whilst, thanks to their respect for authority and for the written word, much has been preserved which would otherwise have been lost beyond recovery.

A mere collection of names and dates, however, would be of little interest or use, so a semblance of vitality has been given to our chronology by the addition of some interesting facts concerning each person, epoch or event.

These are not intended to be complete biographies of the individual, nor does this list purpose to be in any sense a history of medicine.

To clothe the skeleton the student is referred to and should consult the works mentioned in the Bibliography.

ERRATUM.

The portrait on page 177 is that of James Gregory, F.R.S. (1638-1675) professor of mathematics at St. Andrews and Edinburgh, and inventor of the reflecting telescope in 1662.

He was the great-grandfather of James Gregory, the physician mentioned in the text.

CHRONOLOGIA MEDICA.

TRADITIONAL PERIOD.

ABBREVIATIONS.

ca. = *circa*, the approximate date only can be given.

fl. = *floruit*, the time at which he is thought to have reached his maximum.

d. = *died*.

BABYLONIA, CHALDEA, ASSYRIA.

ca. **5000** B.C.—**Ea, or Oannes.** "He who knows all things." "The Lord of Deep Wisdom." The earliest known deity associated with healing. Called "Lord of the Deep," for according to Berossus "He arose from the sea and instructed the people in learning." He is represented as a man with the head of a fish or clothed in a fish skin. His worship is associated with Eridu, the holy city of South Babylonia.

ca. **4500** B.C.—**Marduk, or Merodach.** The chief Babylonian deity of healing, and, according to tradition, son of Ea. As supposed founder of the Zodiac and "Lord of the Planets" he was believed to be the healer of all diseases, and also to influence health and disease in mankind through the medium of the heavenly bodies. His powers are thus described in a Babylonian tablet ca. 4500 B.C. :—

"O Marduk, thou art glorious among the great gods!
No will is greater than thine.
Thou canst inflict upon the guilty one a dropsy which no incantation can cure.
Thou art the merciful one who taketh pleasure in raising the dead to life" (i.e. healing of the sick).

ca. **4500** B.C.—**Nina.** Chief deity of Lagash or Sirpurra and according to tradition a daughter of Ea.

ca. **3500** B.C.—**Adapa.** Believed to be the human incarnation of Marduk, the divine son of Ea. Became recognized as a deity of healing about 3500 B.C. and said to possess the spells of Life and Death. He is often called the "son or man of Eridu," the holy city of South Babylonia. Generally represented as a fisherman with a figure indicative of great physical strength. He is thus referred to in a Babylonian tablet, ca. 3500 B.C. :—

"Ea gave him wisdom,
So that his command was like unto the word of a god·
To him also he gave deep knowledge:
With the healing spell of Life and Death he was made."

ca. **3500** B.C.—**Ellil.** A minor deity of healing. A temple dedicated to him was erected at Nippur to which the sick were brought to be healed.

ca. **3000** B.C.—**Gula.** "The Great Healer," "The Mistress of Charms and Spells," "The Terrible Goddess." This deity had a dual character and was revered as a goddess of healing also as the "mistress of poisons and death-dealing diseases." She was the deified form of the sorceress and the medical schools at Borsippa and Sirpurra were both under her protection. At a later period Gula appears to have been definitely established as a goddess of healing with a medical school attached to her temple. The dog was her sacred emblem.

ca. **3000** B.C.—**Ninib.** God of healing and consort of Gula.

EGYPT.

Thoth. Considered by the ancient Egyptians to be the embodiment of divine wisdom. To him was attributed the invention of the arts, sciences, learning and magic. He was especially skilled in the art of healing. Reputed to be the author of the six divine books dealing with these subjects, and said to have "conferred enlightenment upon doctors." The Greeks identified him with Hermes Trismegistos.

Hermes Trismegistos. The "Thrice Great." An ancient Egyptian personage who is supposed to have originated the science of chemistry. He was the prototype of the Greek Hermes.

Ptah. "Father of the Mighty Fathers." "Father of Beginnings," and "Creator of his own Image." He was the chief god in Memphis and with Sekhet and I-em-Hêtep formed one of the great triad of deities who were worshipped at Memphis, where a magnificent temple was erected to him. His healing powers are chiefly associated with the blind and deaf.

ca. **3500** B.C.—**I-em-Hêtep.** "He who cometh in peace." "Good Physician of gods and men." Was regarded as the son of Ptah and the chief deity of medicine. His first temple was established in Memphis, which became a centre for healing. At a later period temples were dedicated to him at Edfu and various parts of Upper Egypt. It is probable that he was a real personage who lived in the Third Dynasty, and was a priest of Ra, the Sun-God, who for his great skill in healing was raised to the position of demi-god. He is said to have visited the suffering to give them "peaceful sleep and heal their pains and diseases." According to various records he is "the

beneficent god who listens to the prayers of the people, and by his protection gives life to all human beings in all places." "The god who protects human beings, who gives to him who calls upon him, who gives life to men and women and who gives life to all who are bounden to him." He is also called the "god who looks after the sick," and "the worshipful or holy god who gives a son to him who has none."

ca. **3500** B.C.—**Edwin Smith Papyrus.**—Found among the collection of the New York Historical Society. Describes forty-seven different cases of affections and injuries of the head, nose and mouth, also methods of bandaging.

ca. **2700** B.C.—**Nenekhsekhmel. Sikhit-En-Ankh.** Chief physician to one of the Kings of the Fifth dynasty, on whose tomb at Sakkarah is recorded an inscription stating the consideration he received from Pharaoh for his services.

ca. **2700** B.C.—**The Petrie Papyrus.** Excavated by Flinders Petrie near the pyramid of Illahun.

ca. **2000** B.C.—**Kahun Papyrus.** Excavated 1899. Translated by Griffith.

ca. **1552** B.C.—**Papyrus Ebers.** The most complete record of Egyptian medicine known, discovered by Georg Ebers at Thebes in 1872. Preserved at Leipsic and consists of 110 pages.

ca. **1550** B.C.—**Hearst Medical Papyrus,** discovered by

George A. Reisner. Consists of 17 pages preserved at the University of California.

ca. **1300** B.C.—**Medical Papyrus**, in Berlin. Contains 21 pages and was published by Brugsch.

ca. **1000** B.C.—**Medical Papyrus**, in the British Museum, London.

CHINA.

2838-2698 B.C.—**Shēng Nung.** Founder of the healing art in China and called "the father of agriculture." Believed by the Chinese to have discovered the medicinal properties of plants.

2697 B.C.—**Wong Tal.** Author of the earliest known Chinese book on medicine, a work in twelve volumes. He was regarded as the true father of Chinese medicine.

221-264 A.D.—**Wa T'O.** Father of Chinese surgery. He is said to have used a mixture of Indian hemp and other substances to produce anæsthesia before operating.

200 A.D.—**Hua T'O.** Chinese physician of the second century. Skilled in the practice of acupuncture and the use of the cautery.

HINDU.

Dhanwantari. Called "The Physician of the Gods," "The Health Bestowing One," The Vedic Deity of Medicine. He was believed to be master of universal knowledge, and instructed the

Hindus in the healing art. According to tradition he was sent upon earth by Indra when the world was sick to instruct physicians, among whom was Susruta. Bramah revealed to him the Ayur-Veda, and the sacred books of medicine.

Atreya. Son of Atri, a Vedic saint who wrote the earliest known treatise on medicine—the Atreya Samhita.

Agnivesha. A physician and pupil of Atreya who wrote on ophthalmology and a treatise on the diagnosis of disease.

Harita. A pupil of Atreya. Author of a treatise on medicine in which he describes the circulation of the blood.

ca. **4500-2500** B.C.—**Vedas.** The sacred writings of the Hindus which contain many allusions to medicine. To the second of the Vedas belongs the Ayur-Vedas of the physicians Charaka and Susruta, which were composed about 1000 B.C. The Vedas originated about 4500-2500 B.C. and are said to have been preserved by oral tradition until about 1500 A.D.

ca. **1000** B.C.—**The Atharva Veda.** Contains many allusions to the healing art—the tenth book includes a hymn on the creation of man in which several bones of the body are enumerated in complete agreement with the system of Atreya.

ca. **625** B.C.—**Vagbhatai.** Author of an important work on medicine and diseases.

ca. **600** B.C.—**Charaka.** Disciple of Atreya and Agnivesha. His work on medicine contains 120 chapters, mentioning leprosy, epilepsy and tuberculous disease.

ca. **600** B.C.—**Susruta.** Disciple of Dhanwantari. Author of the first Hindu book on surgery, in which he describes many operations and enumerates 121 surgical instruments, 760 medicinal plants and alludes to malarial fever.

PERSIA.

2000 B.C.—**Zoroaster.** Author of Zend-Avesta (Living Word), a portion of which deals with healing, and was the foundation of ancient Persian medicine.

500 B.C.—**Ainyama.** Persian deity of healing.

500 B.C.—**Thrita.** Persian deity of the physicians "who first combated disease and death."

PHŒNICIA.

Baal-Zebal. Ancient Phœnician deity of healing.

Esmun. Son of Synyk. Deity of healing. The eighth of the Cabiri. Temples dedicated to him stood at Carthage and Berytus. Was believed to endow mankind with health.

SCANDINAVIA.

Eïr. An ancient female goddess of healing and one of the attendant deities of Frigg. In ancient times the women attended the wounded on the field of battle under the protection of this goddess.

PRUSSIA.

Perkunnos. An ancient deity of healing, to whom a temple was erected at Romove.

AZTEC.

Ixtlilton. Ancient Aztec deity of healing, especially associated with diseases of children.

Tzapotleman. Aztec deity of healing and wife of Ixtlilton. Is said to have discovered healing spices.

GREEK.

Apollo. According to tradition the father of Asklepios. With his far-reaching and swift arrows (sun rays) he was said to afflict men with pestilence and epidemics. He was believed to possess the power of restoring the dead to life.

Cheiron. The first traditional personage in Greek mythology associated with healing. According to early writers he instructed Asklepios the son of Apollo in the medicinal properties of plants, which he gathered on Mount Pelion, a district he frequented, and where he culled his healing

herbs. Called by Homer "The Sire of Pharmacy."

ca. 1300 B.C.— **Asklēpios.** The chief Greek deity of medicine, who according to tradition was the son of Apollo and Coronis. Secrets of the healing art were said to have been transmitted from Cheiron to Asklepios. It is probable he was an actual personage who lived about 1300 B.C., and was deified for his special skill in healing. His cult became the most important in Eastern Europe, and was the foundation of the medical art in Ancient Greece. The chief temples dedicated to him, where the sick came to be healed, were at Epidaurus, Athens, Tricca and Cos: his symbol was the serpent.

Artĕmis. Greek deity and protectress of women and children. Goddess of parturition.

Amphiaraos. Son of Apollo. Reverenced as a healing deity. Several temples were erected in his honour. According to tradition the sick came from all parts of Greece to sleep in his temples and await his revelations. He is said to have been regarded as a second Asklepios.

Machaōn. Son of Asklepios and described by Homer as a military surgeon.

Podalīrios. Son of Asklepios and described by Homer as a physician.

According to Homer they were both skilled in extracting weapons, the binding up of wounds and in applying soothing drugs.

Hygieia. Daughter of Asklepios. Described as The "handmaid of medicine and goddess of health." She was worshipped in the Asklepion temples at Athens and Corinth. She assisted in the temples of healing and the feeding of the sacred serpents was entrusted to her. Known to the Romans as Salus. They erected a temple in her honour at Rome, the priests of which had the privilege of offering supplications for the health of individuals as well as for the well-being of the State.

Panăceia. A daughter of Asklepios.

Amȳnos. Athenian god of healing. Helper and protector of the sick.

Tĕlĕsphŏros. Associated with Asklepios as the genius of convalescence.

Mĕlampous. Tradition states that by means of hellebore he cured the daughters of Proetos, King of Argus, when suffering from melancholy and leprosy.

ROMAN.

291 B.C.—Æsculāpius. The Roman god of medicine. In the year 293 B.C. a great epidemic of plague broke out in Rome. The Sibylline books were consulted and Asklepios, the Greek god of medicine, was asked for aid. He was brought as an Icon from Epidaurus accompanied by one of the sacred serpents and was landed on the Tiberine Island. He is said to have freed the city from the plague and under the name of Æsculapius became the chief Roman deity of medicine.

Bona Dea. "The Good Goddess." Patroness of chastity and fruitfulness in women. All kinds of healing plants were preserved in her sanctuary.

Minerva Memor. Goddess of Intellect and deity of physicians. Her medical significance is symbolized by a coiled snake.

Dea Febris. Deity associated with fever and malaria.

Dea Salus. Roman embodiment of Hygieia and regarded as a goddess of health.

SCYTHIA.

ca. **696 B.C. Abaris.** Priest-physician of the Scythians, reverenced for his skill in healing.

ERIN.

ca. **480 B.C. Diancecht.** "God of Health" and ancient Celtic father of medicine. His name signifies

"vehement skill." He probably flourished about 480 B.C. According to the "Annals of Clonmacnoise" he accompanied the army of King Nuada, and was present at the battle of Moytura, ca. 460 B.C. At the rear he prepared a great bath of healing herbs, into which soldiers wounded in the fight were plunged and emerged healed and able to fight the enemy again. According to tradition he was the first to construct an artificial hand, which he made of silver for King Nuada. This he did "so skilfully that it moved in all its joints and was as strong and supple as a real one."

GREEK MEDICINE.

THE SCHOOL OF GYMNAST PHYSICIANS. Who relied on exercise and massage as therapeutic remedies.

fl. **470** B.C.—**Ikkos of Tarentum.** A leading exponent of the School.

Herŏdicŏs. Also called **Prŏdĭcŏs** of Selymbria, a gymnast physician who is said frequently to have ordered his patients suffering from fever to walk without stopping from Athens to Megara, a distance of five and a half miles. He was probably contemporary with Plato [428-347 B.C.].

ca. **600** B.C.—**IONIC SCHOOL.**

639-561(?) B.C.—**Thalēs of Miletus.** Founder of the Ionic School. Said to have studied under the

Egyptian priests. He believed water to be the primary element from which all matter was derived.

611-547 B.C.—**Anaximander of Miletus.** Assumed undivided matter to be the primary principle from which heat, cold, dryness and moisture developed themselves.

THE PYTHAGOREAN SCHOOL.

570-489 B.C.—**Pythăgŏras.** Philosopher and Sage. He roamed through Egypt and the East in search of knowledge. He introduced a regular system of dietetics, eschewing meat and instructing his pupils in the theory of medicine. He paid great attention to arithmetic and its applications to weights, measures and the theory of music. His disciples to the number of 300 formed themselves into a brotherhood with secrets, grades and an oath.

fl. 500 B.C.—**Alcmaeon of Crotona.** **Alkmaion)** A pupil of Pythagoras, skilled in anatomy. He is said to have discovered the optic nerves and taught that the brain was the seat of the intellect. The first known Greek medical author. He dissected animals and possibly man. He was the first to extirpate the eyeball. He con-

sidered the external causes of disease to be plethora, inanition and fatigue.

ca. **500** B.C.—**Dēmocēdēs.** Greek physician to Darius, King of Persia.

504-443 B.C.—**Empĕdoclēs of Agrigentum.** Philosopher and Physiologist. Taught that fire, air, water and earth were the four elements and that the human body compounded of these four elements was in health when they were in equilibrium and disease when they were disproportioned. He perceived that atmospheric air was a substance distinct from space and from vapour. He showed experimentally how air could keep water out of, or hold it up in, a vessel or tube. When a pestilence broke out in Selinous due to the stagnant overflow of a river, he is said to have stopped the disease by restoring the current and draining the land. He supposed that emanations from external bodies passed through pores into and through the organs of sense. By hygienic measures he also fought the plague at Agrigentum in Sicily.

Philolaos. A Greek physician and seer regarded as a god by his contemporaries. He was probably contemporary with Socrates, 468-399 B.C. Taught that the causes of disease are bile, blood and phlegm.

500-428 B.C.—**Anaxagoras of Clazŏmenē.** Contemporary of Empedocles and a teacher of Pericles. As an anatomist he dissected the brain and drew

attention to the lateral ventricles, and as a physician he taught that many affections were due to the bile, of which he recognized two varieties: the black and the yellow.

fl. **450** B.C.—**Archĕlaos of Athens.** A pupil of Anaxagoras. He regarded air as the fundamental principle and taught that it gave rise to heat and cold by condensation and rarefaction. He was an intermediary between the older physical and the newer ethical or Socratic Greek philosophy.

494-404 B.C.—**Democrĭtus of Abdĕra.** Founder of the Atomistic Theory. He wrote on the anatomy of the chameleon and believed inflammation to be the result of an accumulation of phlegm.

ca. **470** B.C.—**Ægĭmios of Elis.** Author of the first treatise on the pulse. He attributed plethora to overfeeding and regarded it as a fertile cause of disease. He opposed venesection and drastic purgation.

Hippōn. Carried on the teaching of Democritus. He explained sickness as being due to excess or lack of moisture.

430 B.C.—**Diogenes of Apollonia.** Wrote several works on medicine and described the blood-vessels passing to the left ventricle of the heart. He also described the vena cava with its main branches. He was an advocate of venesection and an observer of the tongue and pulse in disease. Taught that air endued with reason

was the origin of bodily and mental life, air being the vehicle of sense appreciation.

430-425 B.C.—**Plague of Athens.**

ca. **360** B.C. —**Syennsis the Cypriote**. Studied the blood-vessels and wrote on the origin of the veins.

THE SCHOOL OF CNIDOS. Flourished as an offshoot of the Asclepiad School. It was at first clinical and physiological rather than anatomical but degenerated into speculation, phlegm and bile playing the chief part. Obstetrics and gynæcology were amongst the subjects taught.

fl. **450** B.C.—**Eurÿphōn of Cnīdos.** Lived a little before Hippocrates. He is said to have compiled the Cnidian sentences. He explained pleurisy as an affection of the lung and treated phthisis with human and asses' milk. He knew the difference between the arteries and veins and that the former contained blood.

fl. **400** B.C.—**Ctēsias of Cnīdos.** Was a contemporary of Xenophon and lived at the Persian Court. It was partly through his writings that Eastern medicine became known in Greece.

fl. **400** B.C.—**Polycreitos of Mende.** Was living at the Persian Court at the same time as Ctesias.

408-355 B.C —**Eudŏxos of Cnidos.** A friend of **Chrysippos.** He defended the opinions of Plato. Both Eudoxos and Chrysippos, who was a surgeon, travelled through Egypt to gather

medical knowledge from the priests. They were both pupils of Philistion of Locris.

300 B.C.—**Chrysippos.** Son of Chrysippos. Was physician to the Egyptian King Ptolemy. Observed fever by means of the pulse.

Aristŏgĕnes of Cnidos. Physician to the Macedonian King Antigonus Gonatas (283-240 B.C.). He is said to have been a pupil of the younger Chrysippos.

THE SICILIAN SCHOOL. Laid especial stress on diet, a legacy from the teaching of Pythagoras. The teaching of the School was essentially anatomical and physiological and its traditions were carried on and improved by the Hippocratic or Coan School.

400 B.C.—**Akron of Agrigentum.** Physician and pupil of Alcmaeon. He is said to have arrested the great plague which ravaged Athens about 473 B.C. He wrote in Doric a treatise on dietetics.

Pausanias. A Sicilian physician, said to have been a pupil of Empedocles who dedicated to him his poem on Nature.

fl. **370** B.C.—**Philistion of Locris.** A contemporary of Plato and the most distinguished of the Sicilian School. He wrote on surgery, pharmacology and dietetics, lived for a time in Athens and indirectly paved the way for the amalgamation

of the Sicilian with the Coan and Cnidian teaching.

THE HIPPOCRATIC OR COAN SCHOOL. The second great offshoot of the Asclepiads. It was characterized by the value it laid upon prognosis in disease, and coincided with the highest development of Greek culture.

460-377 B.C.—**Hippŏcrătēs.** Son of the Asclepiad Heracleides. Called "the Father of Medicine." He was the first to free medicine from philosophic delusions and superstitions and to establish its fundamental principles upon a solid and rational basis. He propounded aphorisms for the cure of disease and called attention to the value of diet and exercise. He prescribed fumigations, gargles, oils, ointments, poultices and collyria. The Hippocratic collections have been repeatedly printed and translated.

THE DOGMATIC SCHOOL. Infused speculation into the true Hippocratic method. The teaching was derived partly from the Sicilian and partly from the Hippocratic Schools.

fl. **388** B.C.—**Euēnōr of Argos.** A Dogmatist physician who practised at Athens with such success

that he was rewarded for his services to the State. He was distinguished for his knowledge of obstetrics and diseases of the eye.

380 B.C.—**Thĕssălos and Dracōn**. Sons of Hippocrates, were amongst the founders of this School. They applied mystical speculations to the study of medicine and believed that "where observation failed Reason might surprise."

Polybos. A son-in-law of Hippocrates. Writings ascribed to him were printed at Bâsle in 1544 and at Venice in 1545.

370 B.C.—**Dioxippos of Cos, or Dexippus**. Was a pupil of Hippocrates. He is said to have written two books on prognosis.

Apollōniŏs. A pupil of Hippocrates, was at the head of the series of physicians who laid emphasis upon theory as opposed to observation, thus giving to Greek medicine in the fourth century B.C. its speculative colouring.

350 B.C.—**Dioclesion**. A Greek physician who is said to have distinguished between pleurisy and pneumonia.

350 B.C.—**Diōklēs of Euboea.** Son of Archidamus, the physician. He wrote several medical works, lived for some time in Athens, and was considered second only to Hippocrates himself.

ca. 350 B.C.—**Diokles of Carystos**. The last of the Hippocratic physicians and the first to write in Attic Greek. He was a believer in the

value of regulation of diet, exercises and baths and wrote a treatise on hygiene. He urged temperance in all things, and the avoidance of excess. He is said to have been an anatomist and embryologist and was the discoverer of the "Punctum Saliens." He wrote the first book on anatomy describing the lungs, heart, gall bladder, ileo-cæcal valve, ureters, ovaries and tubes.

fl. **340-320** B.C.—**Praxagŏras of Cos**. The teacher of Herophilus. He lived shortly after Hippocrates and was the first to use the word "pulse" in its modern sense. He distinguished between the arteries and the veins but taught that the arteries originated in the lungs and ended in the nerves. He wrote on the diagnosis of acute diseases and operated to cure intussusception.

340 B.C.—**Mnēsitheos of Athens**. A pupil of Praxagoras. He wrote on systematic medicine and dietetics.

Xenophon of Cos, Pleistonikos, Philŏtimos. All dogmatists and pupils of Praxagoras.

Dieuches. A physician at Athens. He is quoted several times by Pliny, but only fragments of his writings are now extant.

Numēnios of Heraklea. A pupil of Dieuches. A dogmatist. He wrote a poem on fishing.

THE PERIPATETIC SCHOOL.

430-347 B.C.—**Plato**. The "myriad minded" Greek philospher and friend of Socrates. Taught that

the heart was the organ which set the blood in motion and was amongst the first to call the great artery of the body "the Aorta."

384-322 B.C.—Aristŏtle, the Stagirite. So called because he was born at Stageira, a Greek colony near the frontiers of Macedonia and Mount Athos. Founder of the Peripatetic School. The pupil of Plato, student, reader, lecturer and writer. A great naturalist as well as philosopher. Dante speaks of him as "the master of all that know." Aristotelian anatomy and physiology show an intimate blending of speculation and empiricism.

370 285 B.C.—Theophrastos. Called "the Father of Botany." Born at Eresos in Lesbos. He was a pupil of Plato at Athens, at whose death he became a pupil of Aristotle to whom he was deeply attached. In his work "Enquiry into Plants" he describes five hundred specimens. He also wrote on mineralogy. His works were translated into English by John Goodyer in 1621, but the version remains in manuscript in the Library of Magdalen College, Oxford. An English translation by Sir Arthur Hort, Bart., M.A., was published in 1916.

Metrŏdōros of Athens. Son-in-law of Aristotle, pupil of Chrysippos of Cnidos, instructor of Erasistratus and teacher of medicine at the Lyceum.

290 B.C.—Eudēmos. He studied the anatomy of the bones, nerves and glands, and demonstrated

the abdominal system of glands and the metacarpal bones of the fingers and toes. He must not be confused with Eudēmos of Rhodes, the editor of and commentator on the writings of Aristotle. Theophrastos and Eudēmos, both pupils of Aristotle, were alone esteemed worthy by the Peripatetic School to take the place of their master.

280 B.C.—Stratōn of Lampsăcos. The son of Arcesilaos, and the tutor of Ptolemaios Philadelphos. A distinguished gynæcologist. He succeeded Theophrastos in 288 B.C. as head of the Peripatetic School. He is said to have described Elephantiasis. He opposed venesection.

300 B.C.—Philarĕtos. A physician of Alexandria. He belonged to the Peripatetic School of medicine. His treatises on the pulse, urine and excreta have twice been published in Latin translations.

Clearchos of Soloi. A physician of the Peripatetic School and a pupil of Aristotle. He wrote on Osteology and Biography.

Callisthenes of Olynthos. Cousin and pupil of Aristotle. Physician to Alexander the Great.

Mĕnōn. A physician of the Peripatetic School who wrote an historical compilation of his art. He was a pupil of Aristotle.

340-260 B.C.—Zĕnōn the Stoic. He advocated a "natural" mode of life as the chief means of happiness.

He taught at Athens in the porch adorned with the paintings of Polygnotus — the Stoa Poikile—and his school thus gained the name of Stoics. He was more philosopher than physician.

THE ALEXANDRIAN SCHOOL OF MEDICINE. The great Anatomical School.

ca. **300** B.C.—**Hērŏphilos of Chalcēdon.** Born at Chalcedon. A pupil of Praxagoras and Chrysippos. The father of systematic anatomical investigation. He was the first to distinguish between the two coats of the eye, and probably the first to describe the lens. He was one of the early gynæcologists. He is said to have noted a disease which he called "palsy of the heart," possibly angina pectoris. His name is still remembered in anatomy by the term "Torcula Herophili." He practised bandaging of the limbs in or against hæmorrhage, and was the great investigator of the brain. He distinguished between the motor and sensory nerves.

ca. **300** B.C.—**Apollodōrus of Alexandria.** Greek botanist and writer on poisons.

fl. **295** B.C.—**Erasistrătos of Julis.** Anatomist and surgeon. He looked upon disease as a disturbance of physiological function and had gained a correct knowledge of the action of the valves of the heart. He was opposed to bleeding and the use of purgatives, advocating in their place

emetics and enemata, and is said to have received £24,375 for restoring to health Antiochus, the eldest son of Seleuchus Nicator, King of Syria, in B.C. 294.

283-247 B.C.—**Ammōnios Lithŏtŏmus.** A surgeon of Alexandria who first performed lithotrity.

250 B.C.—**Demetrius of Apameia.** A disciple of Herophilos. Clinical observer and obstetrician.

Apŏllŏphānes of Seleucia. Physician to Antiochus the Great [B.C. 223-187]. He wrote about venomous animals.

ca. **250** B.C.—**Apollōnios of Memphis.** Wrote on the pulse, surgery and diseases of the eye.

132 B.C.—**The Alexandrian School** became divided into:—

(a) **THE HĒROPHILAN SCHOOL.** Founded near Laodicea, which lasted until the second century A.D.

The chief physicians of the Hērŏphilan School were:—

50 B.C.—**Zeuxis.** The first head of the Herophilan School. He does not appear to be Zeuxis of Tarentum who belonged to the Empiric School, and was one of the earliest commentators on the Hippocratic writings. Zeuxis was succeded by

ca. **1** A.D.—**Alexander Philalēthēs.** Head of the Phrygian School of Medicine near Laodicea. He wrote on the pulse and on gynæcology.

Bakcheios of Tanagra. He elaborated the lore of the pulse.

ca. **30** B.C.—**Hēracleides of Erythrea**. Commentator on the "Epidemic diseases" of Hippocrates.

Andreas of Carystos. Physician to Ptolemy Philopator. He wrote on toxicology and was probably the first to write on rabies.

ca. **30** B.C.—**Apollōnios Mus.** He wrote at least twenty-nine books on the teachings of Herophilos. He was a pupil of Alexander Philalethes and was distinguished as a pharmacologist.

ca. **20** B.C.—**Mĕgēs.** A surgeon, born at Sidon in Phœnicia, who observed tumours of the breast and forward dislocation of the knee-joint, and invented instruments for lithotomy. He practised at Rome.

Demosthenes of Massilia (Marseilles). He is quoted by Galen for the treatment of malignant pustule. Fragments of his writings have been printed.

Demŏsthĕnēs the Oculist. He wrote a "liber ophthalmicus" which was greatly esteemed. He is said to have been also the author of a work on pædiatrics and another on the pulse. Both physicians who bore the name of Demosthenes were also called Philalethes.

50 A.D.—**Aristŏxĕnos**. A pupil of Alexander Philalēthēs. He wrote several books on the teachings of Herophilos.

Gaius of Neapolis. A gynæcologist.

(b) **THE ERASISTRATAN SCHOOL.** Founded in Smyrna 132 B.C. and lasted well into the second century A.D.

fl. **60** A.D.—**Hikĕsios of Smyrna.**—"A physician of no mean authority." Is said to have been the first head of the School. He wrote on drugs and diet. Two medals were struck in his honour by the people of Syracuse.

ca. **70** A.D.—**Mēnodōrus.** A friend of Hikesios and a writer on drugs.

fl. **60** A.D.—**Andrŏmachos the Elder.** The reviser of a formula for a universal remedy and antidote to poisons called "Theriaca" or "Galene" composed of more than sixty-one ingredients, which is still used in some parts of Europe. He wrote the formula in a Greek elegiac poem which has been printed in the original and in two Latin translations. He is said to have been the first Archiater, and the Physician in Ordinary to Nero.

150 A.D.—**Ptolemaios of Alexandria.** Wrote on Optics. A follower of Erasistratus.

fl. **165** A.D.—**Marcianus, or Martialis.** A distinguished anatomist at Rome. Galen says he was an envious and quarrelsome person.

285 B.C. - **THE EMPIRIC SCHOOL.** Arose in Alexandria with the teaching that medicine was essentially clinical and that the cure of the patient should

be its object. Experience, therefore, was the only source of medical skill. The more notable Empirics were :—

ca. **250** B.C.—**Philīnos of Cos**. A pupil of Herophilus. He wrote a commentary on the Hippocratic writings. A parallel has been drawn between Philinos and Hahnemann.

ca. **250** B.C.—**Zeuxis the Elder**.—One of the earliest commentators on Hippocrates.

ca. **220** B.C.—**Serapion of Alexandria**. He wrote a book on Treatment and was antagonistic to the Hippocratic teaching.

219 B.C.—**Archăgăthos**. The son of Lysanias. A Peloponnesian surgeon who settled in Rome and is said to have been the first person who made medicine a distinct profession in that city. He was honourably received at first. The Jus Quiritium, or lower rank of citizenship, was conferred upon him and his surgery was purchased at the expense of the State.

fl. **200** B.C.—**Apŏllōnios the Empiric**. Was probably the son of Apollonios of Antioch who was also an Empiric. He wrote in answer to Zeno's book on the Hippocratic "characters" or "marks" at the end of the third book of the Epidemics.

ca. **180** B.C.—**Glaucias of Taros**. One of the earliest commentators on the whole of the Hippocratic writings. He also wrote an alphabetical glossary on the difficult words in Hippocrates.

Heracleides of Tarentum. Said to have been a pupil of Glaucias. He was called the Prince of the Empirics and was skilled both in surgery and pharmacy.

185-135 B.C.—**Nicander of Colophon.** Was born at Claros in Ionia. He wrote a thousand hexameters on Theriaca, treating of venomous animals and the wounds inflicted by them, and six hundred lines on Alexipharmaca, besides many other poems. The two medical poems have been printed several times. He was the first writer to mention the leech in medicine.

ca. 180-160 B.C.—**Apollonios Biblas, or the Bookworm.** He answered Zeno's reply to the book of Apollonios the Empiric.

200-138 B.C.—**Attalos II.** Surnamed Philadelphos. King of Pergamos. Gave great encouragement to the liberal arts and sciences and is said to have studied the properties of medicines and poisons.

132-63 B.C.—**Mithridates VI.** Surnamed Eupator. "The Great King of Pontus." The enemy of Rome who was conquered by Pompey. He was of the Empiric School and is famous for his study of poisons. He is said personally to have carried out many experiments with poisons and their antidotes and to have rendered himself immune from poisoning by swallowing small doses of poisonous substances daily, including the blood of ducks fed upon toxic principles. His name is preserved in "Mithridatum," a universal anti-

dote, which he professed to devise, and which was modified by Andromachus, physician to the Emperor Nero. It became known as "Mithridate" or "Theriaca" and was prepared from many formulæ, containing a large number of ingredients, up to the end of the 18th century.

ca. 100-80 B.C.—Zōpyros. A surgeon of Alexandria. He classified drugs according to their action and claimed to have discovered a universal antidote, "Ambrosia."

100 B.C.—Asclēpiades of Bithynia. Visited Rome first as a rhetorician and failing in this turned his attention to medicine. Being something of a charlatan he rejected the doctrines of Hippocrates and his successors. He is said to have been the first to classify diseases into Acute and Chronic. As a follower of Epicurus he held that acute diseases were due to constriction of the pores and chronic to their relaxation.

ca. 60 B.C.—Apŏllōniŏs Citiensis. A pupil of Zopyros. Author of a commentary on Hippocrates' work on joints and of a work on epilepsy.

ca. 60 B.C.—Pŏseidōnios. A pupil of Zopyros, who wrote on the bubonic or true plague.

60 B.C.—METHODIC SCHOOL. Founded by Thĕmisōn. This School afterwards gave rise to **the Eclectic** and **the Pneumatic Schools**. The Methodists compared one disease with another in search of common characteristics. They under-

took the early treatment of acute disease by expectant treatment and elaborated a systematic therapy of particular days and cycles.

ca. 123-43 B.C.—**Thĕmisōn**. A pupil of Asclepiades of Bithynia and a native of Laodicea in Syria. He endeavoured to classify disease and based treatment on set rules. Founded the Methodic School. He used leeches and added many compound medicines to the materia medica and also wrote on gynæcology.

25 B.C.-**50** (?) A.D.—**Celsus (Aurelius Cornelius)**. Said to have been born in Rome. Author of an important work on medicine in eight books. He was the first writer to deal professedly with surgery and his pharmacy shows that the art had made considerable advances. His book remained a textbook until the middle of the last century and was repeatedly translated into the chief European languages. He gives directions for lithotomy by the apparatus minor. The first edition of his "De Re Medicina" was printed at Florence 1478.

26 A.D.—**Damŏcrătēs.** Surnamed Servilius. A Greek physician practising at Rome: originator of the Damocratic Confection. He wrote several pharmaceutical works in Greek Iambics.

THE PNEUMATIC SCHOOL OF MEDICINE. Was essentially physiological. It taught that health depended on a normal condition of the pneuma

or vital spirit and is promoted by its tension, which was estimated by the pulse. Sickness was the result of disorder of the vital spirits.

The chief teachers of the Pneumatic School were :—

30-90 A.D.—Arĕtaios. "The Incomparable Aretæus." Cappadocian anatomist and physician. Expounder of the Doctrine of the Pneumatic cult. He wrote a general treatise on disease in Ionic Greek. His works have often been printed and are valuable for their clinical details and power of diagnosis. He distinguished between the conveyance of a disease by contact and at a distance. He remarks on the reaction between body and mind.

30 A.D.—Tiberius Claudius Mĕnĕcrates of Zeophleta. Physician in ordinary to the Emperor Tiberius and the originator of diachylon plaster. He wrote a treatise on pharmacology entitled "Autocrator Hologrammatos" which was dedicated to the Emperor. The formula for diachylon and the directions for compounding it were put into iambic verse by Servilius Damocrates.

47 A.D.—Scribōnius Largus. Author of a medical formulary which has been printed several times. First accurately described the method of ob-

taining opium. Was physician to the Emperor Claudius and perhaps came with him to Britain.

ca. **40-90** A.D.—**Pĕdānius Diŏscŏrĭdēs of Anazaba in Silesia**. The Father of Pharmacy. Famous for his great work "In re Materia Medica." An independent investigator and writer upon the medicines of his time. He travelled extensively in Italy, Gaul, Spain, Germany and Greece. He describes 600 plants. The earliest manuscript of his work extant is that known as the "Manuscript Anicia," VI century, now in the Royal Library at Vienna. It was translated into Latin in the XVI century and continued to be a popular work on the subject for centuries. There is an unpublished interlinear translation into English in the Magdalen College Library at Oxford. It was made by John Goodyer 1652-1655.

60 A.D.—**Thessălus of Tralles**. A contemporary of the Emperor Nero. He termed himself the "Vanquisher of the Physicians." A pupil of Themison and a born charlatan. He taught, however, at the bedside.

ca. **69** A.D.—**Athēnaius of Attăleia**. He practised in Rome at the time of Claudius the Emperor. He operated for cancer of the breast and uterus

and was skilled in controlling hæmorrhage. He is said to have differentiated measles. He published a work on medicine in thirty volumes and laid great stress on the development of the body as well as of the mind in educating the young. He taught that women should learn chiefly domestic economy and should actually knead, bake, make the beds and distribute the household supplies, since bodily movement improves the appetite and produces a healthy complexion.

ca. **75** A.D.—**Magnus.** A pneumatist who lived about the same time as Archigenes and after that of Themison, for he wrote a treatise in Greek in three volumes on things discovered since the time of Themison.

ca. **80** A.D.—**Theodōrus.** A pupil of Athenaios. He is quoted by Pliny.

Appŏllōnios the Pneumatist. He was an advocate of venesection and believed that in plethora the permeation of the periphery by the animal spirit was retarded.

ca. **100** A.D.—**Rufus of Ephesus.** Lived in the reign of Trajan. Physician and anatomist. Regarded the heart as the seat of life and the organ of pulsation. He wrote an anatomical treatise upon the eye and described the oviduct in the sheep. He introduced a "Hiera" containing colocynth into the materia medica, which is

still sold by pharmacists in many parts and has survived to the present day in the form of Pil. Rufi.

THE ECLECTIC SCHOOL OF MEDICINE. Developed from the Pneumatic School by bringing its tenets into harmony with the best of Empiric and Methodic medicine. It flourished in Rome under the first Emperors and did much for the development of surgery.

The chief Eclectics were :—

10 A.D.—**Antonius Musa.** He urged the importance of the study of the normal conditions and the earliest deviations from health. He prescribed periodic abstinence and regular baths. He was physician to the Emperor Augustus and cured him of a disorder of the liver by means of cold bathing and cooling drinks, for which service he was awarded a statue near that of Æsculapius in Rome. He was also physician to Horace.

90 A.D.—**Claudius Agathīnos of Sparta.** Founder of the Eclectic, or as he called it the Episynthetic School. He was a pupil of Athenæus and endeavoured to consolidate the doctrines of the Empirics and Methodists. He wrote on the pulse and taught that cold was preferable to hot bathing. He is also said to have determined the action of hellebore by experiments on dogs.

48-117 A.D.—**Archigenes of Apameia.** The most distinguished pupil of Agathinos, whose life he is said to have saved when he was delirious from want of sleep. He lived in Rome under the Emperor Trajan. Galen said that he was inspired by his writings. As a physician he raised the study of the pulse to its highest point and described diphtheria; as a practical surgeon he ligatured bleeding vessels and operated for cancer of the breast. He was also renowned as a pharmacologist and is mentioned by Juvenal.

ca. **50** A.D.—**Claudius Philoxĕnos.** An Egyptian surgeon who wrote several valuable treatises on surgery.

ca. **100** A.D.—**Herodotus.** A pupil of Agathinos who practised in Rome. Some fragments of his work have been printed.

ca. **200.**—**Leōnidas of Alexandria.** An important surgeon of his time who modelled himself on Philoxenos. He improved the methods of amputation, operated for piles, studied injuries of the head and the treatment of tumours and hernia. He was familiar with the fact that *Filaria medinensis* was endemic in India and Ethiopia.

20 A.D.—**Herennius Philo of Tarsus.** The inventor of "Philonium," a remedy greatly esteemed for a peculiar form of colic common in Rome, in his time. He also originated a confection of opium, which remained in our Pharmacopœias

till 1867. Until 1746 it was called Philonium Romanum, but in that year the name was changed in the London Pharmacopœia to Philonium Londinense.

ca. **75** A.D.—**Hēliodōrus**. A surgeon at Rome who was contemporary with Juvenal. Some fragments of his writings were printed in 1754. He operated for hernia and performed internal urethrotomy.

ca. **100** A.D.—**Marinus**. Anatomist and discoverer of the inferior laryngeal nerves and the mesenteric glands. Said to have discovered the vagus, his "6th" nerve. Author of a treatise on the muscles which was used freely by Galen who described Marinus as the restorer of anatomy.

fl. **98-117** A.D.—**Sorānus of Ephesus**. Anatomist, physician and obstetrician. Renowned for his sagacity. Historian of Hippocrates. In him the Methodic School attained its greatest height for he based his Methodism upon Epicureanism and so combated mysticism. His obstetrical and gynæcological work was of a very high standard and his ideas dominated this branch of the profession until modern times. A few of his writings have been printed. Paulus Ægineta quotes him as the earliest Greek physician to describe the Guinea-worm.

125 A.D.—**Plague of Orosius**.

ca. **130** A.D.—**Cassius the Iatrosophist, or Cassius Felix.** Wrote in Greek on eighty-four questions concerning medical and physical subjects with their solutions. A Latin version of his work was published in 447 and with this book ends the medical literature of Western Rome. An iatrosophist was one who both taught and practised medicine.

130-200 (?)—**Claudius Galen**. "The Prince of Physicians."

Born at Pergamos where there was a great temple to Asklepios. He revived the Hippocratic system of medicine, to which he added principles founded on his own observations. He contributed largely to the existing knowledge of anatomy and physiology, human as well as comparative. He knew the effects of dividing one half and the whole of the spinal cord, and was the first to describe the art of obtaining the virtues of flowers and plants by distillation. He wrote in Greek and was an advocate of bleeding in properly selected cases. His formula for "Theriaca," a preparation containing opium, was in use until quite recent times. He practised sometimes in Rome and sometimes in Asia, and had a large following of pupils as well as patients. His treatise "De methodo

medendi," was a students' textbook in England during the reign of Elizabeth. The first edition of his "Opera" was printed at Venice in 1490.

ca. **250** (?).—**Antyllus.** The surgeon who first described in detail the operation for tracheotomy. He lived between the time of Galen and Oribasius, and his name is still remembered in connection with the treatment of aneurysm by double ligature and excision, as well as for his method of cataract extraction. He also described plastic operations.

164-180.—**Plague of Antonius.**

ca. **200.**—**Alexander Aphrodisiensis.** He was of the Peripatetic School, a native of Aphrodisias in Caria. The most celebrated of the commentators on Aristotle. He did much to encourage the accurate study of Aristotle. Medical treatises have been assigned to him, but it is doubtful whether he was a physician.

d. **212.**—**Quintus Serenus Sammonicus.** Father and son named alike. The father was put to death by Caracalla. Either the father or the son wrote a formulary of medicine for the poor in the form of a poem, the "Medicinæ pracepta saluberrima." It was printed in 1731 and consists of 115 hexameters.

ca. **250** (?).—**Philumĕnos.** A physician of the Methodic School. He wrote rationally on the treatment of various abdominal diseases, e.g., diarrhœa

and upon the diseases of women in their surgical aspect. He also wrote on venomous animals and their remedies and upon the anomalies of parturition. His date is very uncertain.

251-266.—Plague of St. Cyprian.

303.—Cosmas and Damianus. Two brothers, Arabs by birth, who practised medicine gratuitously among the poor of Egea in Cilicia. In the Diocletian persecution they were martyred. For centuries their tomb at Cyrus in Syria was visited by pilgrims suffering from various diseases. The Emperor Justinian in the sixth century built a church in their honour at Constantinople. Later their relics were removed to Rome and placed in the church dedicated to them by Pope Felix. After they were canonized they became the patron saints of medicine and pharmacy, being known as the ἀνάργυροι because they took no fees. The Confraternity of Surgeons of France held them in special honour, the College of St. Côme at Paris being founded by Jean Pitard in 1210.

326-403.—Oribasius. Physician, therapeutist, anatomist and politician. The friend and companion of Julian the Emperor, by whom he was appointed Questor of Constantinople. He advocated scarification in treatment of plague and other diseases and first described a peculiar form of melancholia. Epitomized Galen. Wrote in

Greek and his works were soon translated into Arabic, Syriac and Latin. His treatise on bandaging was a textbook for centuries.

369.—**Hospital of St. Basil.** Erected at Cæsarea by Justinian.

370.—**Sextus Placitus of Papyra.**—A writer on drugs and remedies, mainly those derived from the animal kingdom. Some of his manuscripts translated into Latin survive to-day.

400.—**Caelius Aurelianus.** A leader in the Methodic School. He made a special study of hydrophobia. Recommends music to charm pain. It was through his writings that the work of Soranus became popularized.

In his work on acute and chronic disease, he wrote a textbook of medicine free from mysticism and founded on rationalism. He describes gout and especially advanced differential diagnosis and even hinted at auscultation. It is probable that much of his work was directly traceable to Soranus the Ephesian. His works have been reprinted several times from 1529.

ca. **400.**—**Lucius Appuleius.** Writer of "Herbarium," which is illustrated with drawings of herbs and plants and has been frequently printed. He is usually quoted as Appuleius Barbarus.

fl. **400** A.D.—**Vegetius.** Author of a systematic treatise on veterinary medicine, which was largely copied

from the work of Mago, a Carthagenian, who wrote twenty-eight books on agriculture in 200 B.C. Vegetius alludes to an Army Medical Service among the Romans.

ca. **430.—Hēsychios of Damascus.** Settled in Byzantium after practising for forty years elsewhere. He was one of the fine flowers of the Eastern Empire when the Roman influence in the West was reverting to Barbarism.

ca. **460.—Jacōbus Psycochristus.** First physician to the Emperor Leo the Great, and much esteemed for his skill and experience. He was the son of Hesyschios of Damascus and was known to his contemporaries as the "Zeuxis and Pheidias of Medicine." His disinterestedness and ardent philanthropy were marked by his fellow citizens, who raised a statue to him and gave him the title of "Saviour." He derived his soubriquet of "Psycochristus" from the value he attached to a cooling and fluid diet.

ca. **490.—Asclēpiŏdŏtus.** A pupil of Jacōbus, well versed in mathematics and music. He revived the use of white hellebore in medicine and was essentially a naturalist as we understand the term.

502-575.—Aĕtius of Amida in Mesopotamia. Surgeon and therapeutist, practising in Constantinople. He described the Guinea-worm and he was the earliest Greek medical writer among the

Christians who gives any examples of the spells and charms used by the Egyptians. Some of his works have been printed.

525-605. —**Alexander of Tralles in Lydia**. Physician. Author of many works on medicine and treatment of disease. Recommended the use of amulets and charms. He practised in Rome and travelled much in Spain, Gaul and Italy. He was probably a Christian with some knowledge of Hebrew. His works in Greek with Latin translations have been printed and show that he was more than a mere compiler.

527-565. —**Plague of Justinian.**

529.—**The Abbey Monte Cassino.** Founded by Benedict of Nursia.

ca. 543 (?).—**Palladius of Alexandria**. Commentator on Hippocrates. His writings on Fractures and Fevers have been printed.

ca. 560.—**Uranius**. Practised medicine in Constantinople. Said to have been more famous for his conceit than his skill.

ca. 580 (?). —**Moschion**. Wrote a catechism on diseases of women. His manual for midwives was first translated into Latin and then back to Greek and is mainly taken from the work of Soranus. His date is uncertain.

ca. 600.—**El Harits Ben Kalada**. A Christian physician from El Taif near Mecca He studied at Jondisabur and travelled in India. He in-

fluenced Mohammed in the hygienic and medical views which afterwards became incorporated in the Koran.

590.—Epidemic of Mal Ardent, St. Anthony's Fire (Gangrenous ergotism) in France.

610-641.—Theophilos. A Christian Physician. He was surnamed "Protospatharios," a title originally given to the colonels of the bodyguard of the Emperor at Constantinople, but afterwards to high civil dignitaries. First to write specially on the study of the urine, its colour, consistence, and the prognosis to be drawn from it. He wrote on anatomy and urged the necessity for dissection. He traced the first pair of nerves from their origin. His works in Greek with a Latin translation have been printed.

ca. **610-641.—Ahrun.** Lived under the Emperor Heraclius. Priest-physician of Alexandria. Described small-pox, its cause, symptoms and treatment, and ascribes scrofula to bad food and habits of life. His work, "Pandectæ Medicinæ," in thirty books, written in Greek, was translated into Syriac about 680, and also into Arabic.

621. —Small-pox and Measles said to have made their first appearance.

625-690.—Paulos Ægineta. Surgeon. Made a special study of the diseases of women. He wrote a large work on medicine and surgery, and was so especially consulted by midwives that he

received the title: "Al. kawabeli" or "The Accoucheur." He was held in high esteem by the Arabian physicians, and his works were translated into Arabic by Joannitius. The Greek text has been published and the Latin versions have been repeatedly printed. He advocated cupping and scarifying, and described tracheotomy. There is a good English translation of his works by Francis Adams, of Banchory.

ca. **640.—Stephănos of Athens.** Pupil of Theophilos, the protospatharios. Author of a commentary on Hippocrates and Galen, which is said to be the most important of all ancient commentaries. The original Greek translations and a Latin one have been printed; also his work on medicine.

651.—Hotel Dieu, Paris. Founded by Bishop Landry.

ARABIAN AND ISLAMIC PERIOD.

765-1258.—ARABIAN SCHOOL OF MEDICINE. Founded at Baghdad as a direct outcome of the civilization of the Caliphate period. The School is marked by the number of translations into Arabic of the classical medical writers made by Syrian, Persian, Greek and Jewish physicians.

ca. **765.—Dschordschis Bachtischua.** Christian physician. First physician to the Caliph El-Mansur

in Baghdad. He translated many of the works of the Greek fathers of medicine into Arabic. His son Bachtischua Ben Dschordschis was physician to the Caliph Hárún-el-Raschid in Baghdad.

777-857.—Mesuë the Elder. Arabian physician, probably a Christian. He was the director of the Infirmary at Baghdad and was the author of several works on medicine of which his Aphorisms were printed in 1489.

792.—Hospitals and Medical Schools founded in Baghdad by Hárún-El-Raschid.

794.—Hospital founded at St. Albans, England.

802-849.—Serapion the Elder, or Jahia Ben Serabi. Christian physician of Damascus. Advocated the treatment of disease by diet, regimen and internal remedies. Author of the "Aggregator," "Practica," "Breviarium." He employed venesection largely and gave directions as to the veins to be "breathed" in particular diseases. His identity was concealed by the fourteenth century physicians under the name of John Damascene. Serapion the Younger lived about the end of the eleventh century and wrote, in Arabic, a large work on pharmacology which was translated into Latin. The works of both Serapions have been printed.

809-873.—Joannitius or Hunayn Ibn Ishaq. The son of a Christian apothecary and pupil of Mesuë.

He was one of the great translators of medical works from Greek into Arabic. His introduction to Galen's "Microtegni" was issued in Latin under the title "Isagoge Johannitii in medicinam." It was a text-book of medicine throughout the Middle Ages. He also wrote two treatises on diseases of the eye, of which Latin translations are preserved.

813-873.—Alkindus (Yacub Ibn Ishak El Kindi). An Arab living in Baghdad. He was called "The Philosopher." Author of over two hundred treatises on medicine, only one of which has been printed in a Latin translation.

830-940. Ishak Ben Soleiman, or Isaac Judæus. Jewish physician who practised ophthalmology in Egypt. He wrote on dietetics and advocated the use of senna. He wrote the Pantechni which was erroneously attributed to Galen, and was translated into Latin by Constantine of Carthage. His treatise on fevers was one of the books required of bachelors who wished to graduate as Masters at the University of Montpellier. These works have been translated into Latin and printed.

Algizar (Abu Jafar Ahmed Ben Ibrahim Al-Jezzar). A pupil of Isaac the Jew. He wrote the Viaticum, which had a wide circulation and was translated into Greek, Latin and Hebrew. The "Itinerary for the Poor" is ascribed to him, in

which he treated of the causes of the plague in Egypt.

Al Hazen. Arab ophthalmic anatomist and surgeon. Author of "Opticæ Thesaurus."

702-765.—Geber (Jábir Ibn Hayyán). Famous alchemist and writer on alchemy. Most of the works in Latin under his name, published in the Middle Ages, are spurious. He is said to have discovered corrosive sublimate, nitric acid, arsenious acid, mercuric chloride, silver nitrate, &c.

The Avesta. (*See also* Persian Period.) The sacred book of the Zoroastrians, which mentions three classes of healers, viz , those who treated by prayers and religious observances, by diet and drugs, and by instruments.

ca. **846. SCHOOL OF SALERNO.** A great medical school of medicine which grew up in a Greek-speaking part of Italy and was independent of the Church. From it emanated the Regimen Sanitatis Salernitanum, the popular treatise on health which ran through hundreds of editions and was first printed ca. 1480.

ca. **850.—'Alí Ibn Rabban.** Arab physician and writer of books on medicine, among which was the "Paradise of Wisdom," a work dealing with medicine, philosophy, embryology, psychology and astronomy, also nutrition and dietetics. He mentions tertian and quartan fevers, pleurisy and small-pox, elephantiasis, lupus and cancer.

850-923. Rhazes. (Abú Bakr Muhammed Ibn Zakariyà Ar—Ray, or El Razi.) A Persian by birth. One of the most illustrious of the Arabian physicians, and called the "Galen of the Arabs." He was the director of the hospital at Baghdad and studied, specially, diseases of the eye and skin. The first writer to treat expressly of the diseases of childhood. In materia medica he advocated the use of arsenic, saltpetre, borax, red coral, precious stones and oil of ants. He is said to have written 113 great works and twenty-eight minor works during his lifetime, including a treatise on small-pox and measles, the earliest monograph on the subject. He wrote "Al Háwí" or "Continens," which was read until long after the Renaissance in Europe. He was essentially a clinical physician. His works have been repeatedly printed. An English translation of the treatise on small-pox and measles with extracts from some of his other books, was published by Dr. Greenhill in 1848.

Ibn u'l-Baytár of Malaga. A botanist and writer of several works on materia medica, who travelled through Greece and Asia Minor in search of medicinal plants.

Zaynu'd-Dín Isma'íl of Jurján. Author of several works on medicine, the largest of which is entitled "Dhakhíra-i-Khwárazsháhí," an encyclopædic work containing 1,403 pages, which

includes discourses on local diseases, diseases of the heart, dropsy and materia medica.

936-1013.—Albucasis. (**Abu'l-Qásim Al-Zahráwí.**) Also called Abulkasim, Alzaharavius. (Chalaf Ben Abbas Abul Casim El-Zahrewi) Spanish-Arabian physician, born near Cordova. Author of the "Compendium," "Altasrif," which is mostly derived from the Greek doctrines. It was the leading surgical textbook until the time of William of Salicet. Advocated the use of the actual cautery in most diseases; also described operations for fistula, cataract, goitre and aneurysm and recommended the use of the ligature. He was one of the first to write on deformities of the mouth, and to give illustrations of the instruments employed in surgery.

962.—Hospice St. Bernard founded.

994.—Haly Abbas. (**'Alí Ibnu'l-Abbás Al-Majúsí.**) Persian physician. Author of "El-Malikí" the "Royal Book," the first ten chapters of which treat of the theory and the second ten of the practice of medicine. He deals especially well with the subject of dietetics. It was the standard text-book until it was superseded by the "Canon" of Avicenna. He urges the importance of the regular attendance of the students of medicine at the hospitals, where, he says, "they should pay unremitting attention to the conditions and

circumstances of their inmates, and inquire frequently as to the state of the patients and the symptoms apparent in them, bearing in mind what they have read about these variations and what they indicate of good or evil. If they do this they will reach a high degree in the Art." He was also an authority of his time on obstetrics. He describes perforation, cephalotripsy and extraction by a hook.

980-1037.—Avicenna. (**Abú 'Alí Husayn Ibn 'Abdu'lláh Ibn Síná.**) Called by his countrymen "The Prince of Physicians." He was a Persian by birth. He wrote his first book on medicine at the age of 21. He issued twenty-one great works and twenty-four smaller ones on medicine, philosophy and geometry. The largest and most famous of his works is the great "Canon." In it he comments on anatomy, physiology, medicine, surgery, midwifery, psychiatry and materia medica. He is said to have been the first to note that phthisis was contagious. The "Qánún" or "Canon" was long regarded as an infallible oracle of medicine. His works have been printed in Latin and Hebrew as well as in Arabic. His tomb is at Hámadan.

ca. **920.—Theophanes Nonnus.** He was ordered by the Emperor Constantine Porphyrogenitus to compile the medical portion of an encyclopædia,

which he did in 290 short chapters embodying the work of Oribasius, Aëtios, Alexander of Tralles and Paul of Ægineta.

960-976.—The Golden Age of Moorish Medicine at Cordoba in Spain.

d. **1050.—Gariopontus.** One of the early teachers in the School of Salerno. Edited the "Passionarius," a handbook of special pathology and therapeutics of Byzantine origin. It was erroneously attributed to Galen. Was the first to mention anæsthesia by inhalation of narcotic vapours.

ca. **1010-1087.—Constantine the African.** Born at Carthage: studied at Baghdad and banished to Salerno. He was converted to Christianity and became a monk at Montè Cassino in 1075. Author of treatises on disorders of the stomach and on melancholy. An early graduate of the School of Salerno. He translated many of the Arabic treatises into Latin and was thus instrumental in introducing them to Western European medicine.

fl. **1050.—Ali Ben Isa, or Jesus Haly.** Writer of a "Book of Memoranda for Eye-Doctors," which has been preserved entire. The leading ophthalmic surgeon of the eleventh century.

1113-1162.—Avenzoar, or Abumeron. (**Abw el Malik; Abu Merwan Ibn Zuhr.**) Spanish physician and surgeon. Probably a Jew, born near Seville, of a renowned medical family, he was

called "The Wise and Illustrious." Experimented on animals and probably was the first to attempt the total extirpation of the uterus. Recommended goat's milk in phthisis and noted the harmful effect of emanations from swampy ground. He described the *Acarus scabiei* and advocated that experience should be the sole guide of the physician. He wrote "Al Teisir," a treatise full of interesting details. Latin translations of his works have been printed.

1020-1105.—Michael Psellus. Wrote works on "The Bath," "The Healing Power of Precious Stones," and a treatise on dietetics.

1021, 1278, 1375.—The Dancing Mania. Raged in the two former years and in 1375, as an epidemic of chorea, which is still perpetuated in the name of "St. Vitus's Dance."

1099.—Order of St. John of Jerusalem founded.

fl. **1100.—Joannes Hispanus, or John of Toledo.** He translated into Latin a pseudo-Aristotelian epistle to Alexander the Great which may have been the prototype of the Regimen Sanitatis Salerni.

1114-1187.—Gerard of Cremona. Lived at Toledo and was the translator-general of his time of the works of Hippocrates, Galen and many of the Arabian writers.

1126 1198.—Averroës. (Abul Welid Muhammed ben Ahmed ebn Roshd Ibn Rushd.) A Moham-

medan physician of Cordova. Was a pupil of Avenzoar and governor of Andalusia in 1196. Exercised considerable influence in his time. The followers of Averröism held a mixture of peripatetic, neo-platonic and oriental conceptions which resulted in a form of Pantheism. He wrote "Colliget," a colossal commentary on the Canon of Avicenna.

1123.—St. Bartholomew's Hospital (London) founded by Rahere.

1131.—Clergy forbidden to practise medicine by Council of Rheims.

1132. Holy Cross Hospital founded at Winchester.

fl. **1130-50.—Matthew Platearius.** A member of a distinguished medical family. He wrote a treatise "de simplici medicina," which from the first words of the text is usually quoted as "circa instans."

1135-1204.—Maimonides (Músá Ibn Maymún, Moses ben Maimon), of Cordova. Physician and philosopher. Author of "Aphorisms" and works on dietetics and hæmorrhoids. After much persecution he settled in Cairo and became physician to the sons of Saladin, for whom he wrote a treatise of personal hygiene which was printed in 1478. He also wrote on poisons.

1140.—King Roger II. of Sicily issued an edict forbidding anyone to practise medicine without an examination.

ca. **1140.—Nicholaus the Salernitan**. Sometimes confused with Nicholas Prepositi, President of the School of Salerno. He was the author of "Antidotarium" in which the apothecaries' weight is stated. Author of a work called "Quid pro Quo," an alphabetically-arranged catalogue of equivalent drugs. From this title the common expression originated. He described the soporific sponge for use before operating. It was steeped in a mixture of opium, hyoscyamus, mulberry juice, lettuce, mandragora, and ivy, dried and when moistened inhaled by the patient. The Antidotarium was printed at Venice in 1471.

1145.—Hospital of the Holy Ghost founded at Montpellier by William VIII of Montpellier.

1180-1250 (?).—**Gilbertus Anglicus, Gilbert of England.** The Gilbertyn of Chaucer's prologue. Author of the "Compendium Medicinæ," a systematic Latin text-book founded on Arab writers and their copyists. Possibly took part in the Third Crusade. Mentions the use of mercurial preparations and acetate of ammonia in medicine and makes a clear distinction between measles and small-pox. He also wrote a first-hand description of leprosy.

fl. **1190-1252.—Ricardus Anglicus, Richard the Englishman**. A Master at Salerno who lived for some time in France and in England. He wrote

"Micrologus," a textbook on medicine. He was Master of the Hospital of St. John at Rome and died in 1252. He also wrote a work on anatomy which has been printed. (He is not identical with Ricardus Anglicus or Richard of Wendover, physician to Gregory IX).

1193-1280.—Albertus Magnus. Albert von Bollstädt of Lauingen, Swabia. A Dominican monk and Bishop of Ratisbon. He was a philosopher and student of anatomy, physiology and botany. He wrote "De Animalibus" and "De Vegetabilibus." He was an early example of an Encyclopædist and had as a pupil Thomas Aquinas. His collected works are contained in twenty-one quarto volumes.

fl. **1180.—Roger of Palermo.** Surgeon. Taught in the School of Salerno. He wrote his "Practica" in 1180.

fl. **1250.—Roland of Parma.** Professor at Bologna, pupil of Roger. He advocated excision of chancres, scrofulous glands and goitre. He edited in 1264 the "Rogerina" or "The Practice of Surgery," written by Master Roger in 1180. This was the textbook on which the four Masters wrote their celebrated commentary.

Roland's version of Roger's treatise is usually quoted as "Rolandino."

fl. **1230.—Joannes Jamerius, or Jamatus.** A surgeon of the School of Salerno. He wrote the "Chirurgia Jamati" which has been printed. Gui de Chauliac says of it: "Jamerius followed (the four great masters) who made a sort of rough surgery in which there were many pointless things."

1247.—Rashídu'd-Dín Fadlu'lláh. Born at Hámadán, where Avicenna is buried and was one of the most learned men and scholarly writers of his time. Was Court physician to the Mongol ruler Abáqá. Amassed great wealth which he used in a beneficent manner for the foundation of hospitals, colleges and libraries. He lived at Tabriz.

1201-1277.—William of Salicet. Surgeon and professor at Bologna and Verona. He was ordained priest. Author of "Chirurgia" in 1275 and works on medicine. He recognized arterial bleeding by the spurting of the blood, used the knife in place of the cautery, sutured divided nerves and wounded intestine and understood the value of crepitus in diagnosing fractures. He was the first to employ chemical preparations in the treatment of disease.

1205-1298.—Theodorius, or Theodoric of Cervia. Son of Hugo Borgognoni, founder of the Surgical

School at Bologna. Theodorius, trained as a surgeon, entered the church and became Bishop of Cervia in 1266. He compiled a work on surgery which gained a considerable reputation and he taught that pus was not necessary in the healing of wounds. He ranks as a pioneer in aseptic surgery. He was surgeon to Pope Innocent IV and recommended opium and henbane to stupefy patients before an operation.

1210.—**College of St. Côme in Paris** founded by Jean Pitard.

1215.—**St. Thomas's Hospital, London,** re-founded by Peter, Bishop of Winchester.

1214-1292.—**Roger Bacon.** To whom is attributed the invention of gunpowder, the telescope, lenses and, probably, the microscope and the burning glass. Writer on the natural sciences, chemistry, physics and astronomy.

1224.—**Frederic II issued an Ordinance** requiring that candidates desiring licence to practise medicine must be properly examined by the masters at Salerno.

1235-1312.—**Raymond Lully.** A monk who wrote on alchemy and philosophy and also on medical subjects, viz.: "De Pulsibus et Urinis," "De Medicinæ theorica et practica."

1241.—Small-pox first appeared in England.

1245 (?)-**1310.—Arnold of Villanova.** Physician, Alchemist and Astrologer. Born in Spain and educated at Naples Practised at Barcelona, Avignon and Montpellier. Physician to Peter III of Aragon and Pope Clement V; treated Pope Boniface VIII for stone in the bladder. Ambassador from Peter of Aragon to Philip le Bel. He wrote a commentary, "Parabolæ," on the Regimen Sanitatis Salerni, and a set of aphorisms dedicated to Philip le Bel, a Compendium of Practice and a Herbal. He introduced alcohol and medicinal wines into the materia medica; brandy he held to be the "elixir of life." A collected edition of his works was printed at Lyons in 1504, and passed through nine editions.

ca. **1290.—Nicholaos Myrĕpsos of Nicaea.** Studied at Salerno. The author of an "Antidotarium," or pharmacopœia compiled from Greek, Latin and Arab authors, containing 2,656 recipes against disease. It was printed in 1541 and was largely used as a book of reference until the sixteenth century.

ca. **1252.—Bruno of Longoburgo** (Calabria). Surgeon and Professor at Padua; author of "Chirurgia magna" and "Chirurgia parva." Notices amputations in gangrene of the limbs, and ligation of arteries, and was an acute observer.

ca. **1260.**—**Trotula de Ruggieri**. Of the School of Salerno, the reputed authoress of a treatise entitled: "De passionibus mulierum ante, in et post partum." Trotula is thought to be the diminutive of Trotu. The name may have been applied to the women nurses who followed the gynæcologists at Salerno and it seems likely that the name Trotula was given to the book itself and not to the writer of it.

fl. **1264.**—**Vincent de Beauvais.** Author of "Speculum Majus," a well-known encyclopædia of the scientific knowledge of the time, written for the children of King Louis IX to whom he was tutor. The work was printed at Strasburg in seven vols., 1473-76; at Nuremburg in two vols., 1485; and at Douai in four vols, 1624.

ca. **1280.**—**Johannes Actuarius of Constantinople.** Physician at the Court of the Palæologi and Uroscopist at the Byzantine Court. The last of the Byzantine writers. Author of "De Methodo Medendi." Mentions the use of cassia, manna, myrobalans and senna fruit as mild purgatives, and observes the value of the consideration of the urine and the pulse in prognosis. He introduced the use of a graduated glass to measure the deposits in urine on the principle afterwards employed in the "Chemical Weather Glass."

1298 (?)-**1368.—Gui de Chauliac.** Surgeon. Studied at Montpellier, Toulouse, Bologna and Paris. Became physician to Popes Clement VI, Innocent VI and Urban V at Avignon. Author in 1363 of "Chirurgia Magna" which for centuries influenced the art in Europe. It was translated into French, Provençal, English, Italian, Dutch and Hebrew. No English version has been printed though there are several in manuscript. Advocated venesection and the actual cautery, and performed lithotomy. Hæmorrhage he classified as arterial and venous. He used styptics, sutures, the actual cautery and ligation. In 1353 he was appointed Canon and Prebendary of Rheims.

d. **1315.—Lanfranc of Milan.** The pupil of William de Salicet who brought Italian surgery to France. Surgeon and lecturer at the Collège de Saint Côme in Paris. Inaugurated clinical lectures, and advocated the actual cautery. In his "Chirurgia Magna" and "Minor" written 1295-1296, he describes thirty-two forms of ulcers, diseases of the eyes, ears, nose and skin, also treatment of fractures and dislocations. He taught that anatomy was the foundation of surgery and may be considered the father of French surgery.

1285.—Salvino degli Armati (d. **1317**) **and Spina** (d. **1313**) of Florence, are said to have invented spectacles.

1250-1320.—Peter of Abano, near Padua. Physician and philosopher. Believed in astrology, and author of work on poisons. His work, "Conciliator differentiarum," was printed at Venice in 1471.

1260 (?)-1320.—Henri de Mondeville. Surgeon. Student at Montpellier, Paris and Bologna. Pupil of Theodoric. Military surgeon and afterwards surgeon to Philip the Fair and his son Louis le Hutin. Laboured to bring surgery to a position of as great honour in France as it held in Italy. Used in teaching anatomical plates of a more natural type than the traditional pictures hitherto employed. Like Theodoric, he taught that wounds should heal without suppuration. His Surgery, written between 1306 and 1316, has been printed and is excellent reading, as he had a very caustic wit and a graphic pen.

1275 (?)-1330.—Jan Yperman. Dutch surgeon. He may have been a pupil of Lanfranc, but he practised at Ypres as surgeon to the Belle Hospital and served in the wars. He wrote a textbook of surgery in Dutch which shows much originality.

1276-1326.—Mundinus de Luzzi. Mondino Surgeon and anatomist of Bologna. First to perform a dissection of the human body in

public, and to advocate its advantages in the teaching of medicine. Author of "Anatome omnium humani corporis interiorum membrorum," 1316, which served as a textbook for anatomy for more than a hundred years. It was said of him, "Mundinus quem omnis studentium universitas colit ut Deum."

1307-1326.—Alessandra Gigliani. Prosector to Mundinus at Bologna. A pioneer of anatomical injection and wax modelling; by her skill in these forms of demonstration she added greatly to the fame of Mundinus' teaching. She died "consumed by her labours" at the age of 19.

1315.—Mondino performs his first public dissection of a human subject.

ca. **1300.—Bernard Gordon.** Of Scottish descent. One of the earliest professors at the School of Montpellier, where he began to teach in 1285. Author of the "Lilium medicinæ," issued in 1305. First printed at Naples, 1480. It was a widely-read textbook for a century. Mentions the use of spectacles, calling them "oculus berellinus" and gives the first description of the modern truss. His book is typical of the Middle Ages in its rigid adherence to dogma.

1280 (?)-**1361**.—**John Gaddesden**, M.D.Oxon. Physician in ordinary to Edward II. Author of "Rosa Anglica" in the year 1314. First edition printed in 1492. The work is largely a compilation from the Greek, Arab and Jewish physicians. He had some reputation among his contemporaries as one skilled in the diseases of women.

1307-**1380** (?).—**John Arderne**. Operating surgeon, not in orders. Practised in Newark 1349 to 1370, and afterwards in London. Appears to have served as an army surgeon in France. Specially studied fistula, for which he operated successfully. He describes his method and instruments in his "Practica," which contains a chapter on "The Fistula in ano." Some of his formulæ were included in the second issue of the first London Pharmacopœia of 1618, and remained in use until 1722. Like Theodoric and de Mondeville he taught that wounds should not suppurate. Some of his works have been translated and published recently.

d. **1330**.—**Guilelmo Varignana.** Professor of medicine at Bologna. He was a follower of the Arabian School and the son of Bartolomeo Varignana [d. 1318], who wrote on "The Doses of Medicines."

ca. **1330**.—**Simon de Corco de Genoa.** Botanist who travelled throughout the Near East, Greece

and the Orient, to acquire a knowledge of plants, to name them correctly and learn their medicinal properties. He wrote "Synonyma medicinæ."

1333.—Medical Botanical Gardens founded at Venice.

? **1345.—Record of the first apothecary's shop** in London. There is one recorded in York in 1292.

1348 and onwards.—**The Black Death.**

ca. **1360.—John Mirfeld.** Wrote the "Breviarium Bartholomei" in 1387 in the Priory of St. Bartholomew's, London. The work is extremely interesting and still awaits transcription and publication.

1385-1450.—Thomas Morestede. Surgeon to Henry IV, Henry V and Henry VI. He accompanied Henry V on his second expedition to recover Normandy. Master of the surgeons in the abortive scheme for uniting the physicians and the surgeons in London in 1423.

ca. **1400.—Petrus ab Argelata.** Surgeon and professor at Bologna. Pupil of Gui de Chauliac and embalmer of Pope Alexander V. He recommended compressing bandages in chronic ulcers and used the cautery in varicose veins.

1409.—Asylum for the Insane, established at Seville.

fl. **1447.—Antonio Guainierio.** Physician and author of work on Diseases of Women. Notes pregnancy in the absence of menstruation. First to mention the use of wax bougies and metal sounds

in the treatment of urethral stricture. Was physician to several of the Piedmontese nobility.

Basil Valentine. Possibly the pseudonym of Johann Thölde, an alchemist of Franckenhausen. He described the manufacture of sulphuric and hydrochloric acids and lead acetate and extolled the virtues of antimony in his work: "Triumphal Chariot of Antimony," printed in 1604. He recommended a mixture of mercury, lead and antimony in the treatment of syphilis.

1384-1462.—Michael Savonarola. Professor of medicine at Ferrara and author of several works on obstetrics and medicine. He was the grandfather of the great preacher and religious reformer.

ca. **1430.—Sante Arduino of Venice.** Studied drugs and their actions. The result of his work is embodied in "De Venenis," Venice, 1492.

ca. **1450** (?).—**Brancas of Catania.** A family of itinerant Sicilian surgeons. Said to have been the first to have made use of the skin of the forehead, cheek or arm to restore the lips and ears. They kept their rhinoplastic methods secret until they passed into the family of Vianeo and thence to Tagliacozzi, who first published the method in 1597.

d. **1460.—Bartolommeo Montagnana.** Anatomist and sur-

geon. He described strangulated hernia and operated for lachrymal fistula.

d. **1463.—Gilbert Kymer**, M.D.Oxon. Dean of Salisbury and a Chancellor of the University of Oxford. Rector of the Faculty of Medicine in London. Physician to Humphry, Duke of Gloucester, the founder of the first public library at Oxford.

fl. **1470.—Benevenuto Grassi.** A physician of Salerno and writer on ophthalmology. His work "De oculorum egritudinibus" was printed in 1475. In his "Practica oculorum" he mentions amblyopia and amaurosis.

d. **1484.—Johannes Arculanus of Verona.** Professor of Medicine at Bologna and Padua. He described gold fillings for teeth.

ca. **1470-1490** (?).—**Valescus de Taranta.** Born in Portugal, taught and practised at Montpellier. Physician to Charles VI of France. Author of a treatise on the plague and "Philonium," a work on medicine and surgery in seven books; suggested the extirpation of cancer by means of a preparation containing arsenic.

1428-1524.—Nicolaus Leonicenus. Physician and professor of medicine at Padua, Bologna and Ferrara. A friend of Linacre. Studied syphilis, regarded it as infectious, and wrote a work on the subject which was published from the Aldine press at Venice in 1497. He translated the aphorisms of Hippocrates, and, in

spite of much opposition, pointed out the errors in botany made by Pliny in his natural history.

1430-1493.—Hieronymo Manfredi. Eminent philosopher and astrologer. Professor of Medicine at Bologna, 1463. Published a textbook of anatomy for the entertainment of the Duke of Bologna, also works on astrological medicine. An anatomical manuscript preserved in the Bodleian Library at Oxford has recently been printed.

fl. **1450.—Ortolff von Bayrlandt.** Author of a popular work on midwifery which was printed before 1500. He lived in Würzburg.

ca. **1450-1533.—Heinrich von Pfolspeundt.** Bavarian army surgeon. Treated arrow wounds and alludes to gun-shot wounds. Describes the operation for harelip and rhinoplasty.

1450-1533.—Hieronymus of Brunschweig, or Jerome of Brunswick. An Alsatian army surgeon. Author of an illustrated work on surgery and one on herbs, simples, and the art of distillation. He describes gunshot wounds and taught that they were poisoned, a subject of surgical controversy until the nineteenth century. The first edition of the "Buch der Chirurgie" was printed at Strasburg, 1497, and was translated into English in 1525. The English version of his book on distillation was published in 1527, and is also an illustrated herbal.

d. 1526.—**Eucharius Rösslin, or Rhodion of Frankfurt and Worms.** Author of the "Rosegarten," an illustrated textbook on obstetrics, which had a wide circulation and was translated and plagiarized. It is mainly a compilation from Soranus of Ephesus. The first edition was printed in Augsburg in 1502.

fl. 1500.—**Hans von Gersdorff.** German Surgeon. An experienced and successful operator. After amputation he applied a bandage without sutures, and checked hæmorrhage by a caustic plaster or actual cautery. Taught that gunshot wounds were not poisoned. Published the "Feldtbuch der Wundarztney" in 1517, a book on military surgery, which is curiously illustrated. His works were translated into Dutch and Latin.

1452-1519.—**Leonardo da Vinci.** Equally great as an anatomist and original dissector of the human body and as a painter. He inspired the work of Vesalius. His notes on the drawings of his dissections are interesting examples of "mirror-writing." His MS. "Quaderni d'Anatomia," is now in the library at Windsor Castle.

1473-1506.—**Mark Antonio della Torre.** Anatomist of Verona. Remembered for his association with Leonardo da Vinci, whose anatomical drawings were intended to illustrate a work by della Torre. He died before it was written.

ca. **1460-1519.—Giovanni de Vigo, of Rapallo, near Genoa. John of Vigo.** Surgeon and physician to Pope Julius II. Introduced the crown trepan and wrote a textbook of surgery in Latin which was translated and passed through many editions.

1460-1524.—Thomas Linacre. Born in Canterbury. Studied in Oxford and Italy. Physician to Henry VIII. Charter of incorporation granted to the College of Physicians, London, through his influence, Sept. 23, 1518, and was the first President. Translated the "Oath of Hippocrates," and the "Methodus Medendi" and founded three lectureships in medicine at Oxford and Cambridge. He was a friend of Erasmus and was as well known for his classical as for his medical knowledge. He was admitted to priests' orders about 1509 and held several positions of dignity in the Church.

1460-1525.—Alexander Benedetti of Legnago. Surgeon and anatomist. Professor at Padua. Operated for hernia, stone and rhinoplasty. Physician to Emperor Maximilian. Wrote a book on anatomy and a treatise on the plague.

1462-1536.—Johannes Manardus, of Ferrara. Physician to King Ladislaus, of Hungary. Advocated the observation of Nature, and revived the methods of Hippocrates.

1462.—First calendar indicating times for letting blood. Printed at Mainz.

1463-1525.—Alexander Achillini. "The great philosopher." Pupil of Mundinus. Professor of philosophy at Bologna and Padua. Described the duct of the submaxillary gland which was re-described by Thomas Wharton in 1656. Wrote a commentary on Mundinus in 1522, and a student's note-book on anatomy 1516.

1464-1534.—Otto Brunfels. Physician. Distinguished for his work in botany, which he embodied in his "Herbarum Vivæ Icones," Strasburg, 1530-36, illustrated with woodcuts. He was originally a monk, became a follower of Luther, graduated in medicine at Bâle and was appointed city physician at Berne in 1533.

1468-1505. Gabriel Zerbi. Professor of anatomy and logic at Padua, Bologna and Rome. Was sent by the Venetians to Constantinople to attend a Turkish Pasha; an apparent cure was effected, but the Turk died later and Zerbi and his sons were pursued and massacred. Wrote a book on anatomy with some original observations (1502), and a work entitled "Cautelæ medicorum."

1472-1549.—John Chambre. Born in Northumberland; educated at Oxford, and took his M.D. degree at Padua. Physician to Henry VIII. Dean of St. Stephen's, Westminster. Mentioned first of the six physicians in the letters patent granted to the Royal College of Physicians of London in 1518.

1473-1560.—Francisco Lopez de Villalobos. Physician in ordinary to Charles V and Philip II. One of the earliest to describe syphilis in a book entitled "El sumario de la medicina con un tratado sobre los pestiferas bubas." Printed Salamanca, 1498.

ca. **1494.— Diego Alvarez Chanca of Seville.** Physician to Christopher Columbus and author of the first written document about the flora, the fauna, the ethnology and the anthropology of America. It is in the form of a letter to the municipal authority of Seville.

1473.—First edition of Avicenna's Canon printed at Pavia.

1478. —First edition of Celsus printed at Florence.

1478.—Mondino's "Anathomia" printed at Leipzig.

1478-1522.—Pierre Brissot. Physician. Practised in

Paris. Revived the Hippocratic method of bleeding, which was **derivative** or near the lesion for which it was undertaken, in opposition to the Arabic teaching that it should be **revulsive** or at a distance from the lesion. The teaching was considered to be subversive and led to a prolonged controversy.

ca. 1551.—Luis Lobera d'Avila. Physician in ordinary to Charles V. He described syphilis and its cure by inunction. He also wrote among other works "Vanquetos de nobles Cavalleros," ca. 1530, which contains several woodcuts of surgical operations."

1478-1555 — Jacōbus Sylvius, or Jacques Dubois. Born near Amiens. Anatomist. Teacher of Vesalius and Servetus at Paris. Author of "Isagoge anatomica," several books on pharmacy and treatises on Hippocrates and Galen. The names he gave to many anatomical structures are still retained. He knew the valves of the heart and taught of the foramen ovale in the fœtal heart. He is not to be confused with Franciscus Sylvius [1614-1672] after whom the fissure of Sylvius is called. Substituted human bodies for pigs in his dissections. An uncompromising Galenist, miser and of barbaric manners.

1480 (?)**-1550.—Berengarius of Carpi, Giacomo Berengario.** Anatomist and surgeon. He extirpated the prolapsed uterus and treated syphilis—Benvenuto Cellini amongst others—by mercurial inunction. Professor at Bologna, 1502-1527, and Pavia. He wrote a treatise on fracture of the skull and a commentary on the anatomy of Mundinus, in which he substituted drawings from nature in place of the traditional schemata. First to describe the appendix and hepatic circulation, the os basilare and the sphenoidal sinus.

fl. **1480.—Ketham, Johannes de.** German physician, who practised at Venice. Edited in 1491 "Fasciculus medicinæ," a collection of current writings by the medical men of his time. The book contains anatomical illustrations and fine wood engravings. There are several editions in Latin and Italian with varying blocks. The drawings themselves have a long and interesting antecedent history.

1481.—First edition of Rhazes in Latin printed at Milan.

1485.—Caxton printed at Westminster the first book on medicine in English: "A litil boke for the pestilence."

1486.—Epidemic of Sweating Sickness in England.

1486-1535.—Heinrich Cornelius Agrippa von Nettesheim. Physician, astrologer and alchemist. He practised at Freiburg, Lyons and Paris,

and wrote "De vanitate scientiarum" and "Occulta philosophia."

1491.—First dated edition of Ketham's "Fasciculus medicinæ" printed at Venice.

d. **1545.—Sir William Butts,** M.D., Cambridge. Principal of St. Mary's Hostel, Cambridge. Physician to Henry VIII and Princess Mary, afterwards Queen Mary, a friend of Wolsey, Cranmer and Latimer and a patron of Sir John Cheke. He appears in Holbein's picture in the Barber-Surgeons' Hall, and is introduced by Shakespeare into the play of "Henry VIII." Knighted ca. 1545.

1484-1553. Fracastorius, or Girolamo Fracastoro of Verona. He wrote in 1530 "Syphilis sive Morbus Gallicus," whence the name of the disease is derived. As a geologist he accounted for the presence of fossils in a modern spirit and as a physicist he referred to the magnetic poles of the earth. His works have been frequently reprinted.

1487-1574.—Johannes Guinterius, or John Winter of Andernach. Professor of Greek at Louvain and afterwards of Medicine at Paris and of Anatomy at Strasburg. He was physician to Francis I and Henry II of France. Servetus and Vesalius were his pupils and prosectors. Author of "De Medicina veteri et nova," 1571, and "Institutiones anatomicæ," 1536.

ca. **1545.—Walther Hermann Ryff.** Physician and surgeon of Strasburg. Author of works on anatomy, surgery, obstetrics and distilling. His works, illustrated with woodcuts, were first printed at Strasburg and Frankfort in 1541-5.

1490-1549.—Andrew Boorde. Suffragan Bishop of Chichester: Carthusian monk, traveller and physician. Author of "A Breviarie of Health," 1547, and a "Compendyous regimen, or a dietary of health," 1542. He sent rhubarb seeds from Spain to England nearly two hundred years before the plant was cultivated here. He is supposed, but absurdly, says Mr. F. J. Furnivall, to have been the original "Merry Andrew."

ca. **1560.—Joost van Lom.** City physician of Tournai and Brussels. Author of works on fevers and general medicine which ran through many editions.

1491.—First edition of Hortus Sanitatis printed at Mainz.

1492.—First edition of John Gaddesden's Rosa Anglica printed.

1492.—Syphilis first appeared in Europe.

d. **1545.—Jean Tagault, or Tagaultius.** Professor of Surgery in the University of Paris and Dean of the Medical Faculty. He wrote a book on surgery in Latin. It passed through several editions and was translated into French, Italian and Dutch. It became the standard textbook for English students in the sixteenth century and is often quoted.

ca. **1580—François Rousset.** Surgeon to the Duke of Savoy and later in life practised in Paris. He was amongst the first to practise abdominal surgery. He performed successfully fifteen Cæsarean sections.

1490-1555.—Georg Agricola of Glauchau, in Saxony.

The father of Mineralogy. Physician and mineralogist. Discoverer of bismuth. He wrote "De re metallica," a treatise on earthquakes and a book on the plague. He served as city physician and royal historiographer at Chemnitz.

ca. **1500.—Angelo Bolognini.** Professor of surgery at Bologna from 1493. Military surgeon.

1493-1541.—Theophrastus Bombast von Hohenheim, Paracelsus. Physician, surgeon, alchemist and astrologer. In his early days wandered throughout Europe. In 1527 became city physician and professor at Bâle. Burnt the works of Galen, Avicenna and other fathers of medicine before the students in his lecture room. Associated with an overwhelming sense of self-importance, his writings bear evidence of an independent spirit, originality, and great force of character. He abandoned the teaching of the ancients and claimed to be a reformer and a true follower of Nature. He originated many improvements in the pharmacy of his time. He was one of the first to make simple extracts of drugs and tinctures.

d. **1562.—Thomas Vicary.** Surgeon to Henry VIII, Edward VI, Queens Mary and Elizabeth. First surgeon to St. Bartholomew's Hospital after the Dissolution. Published "The Englishman's Treasure, or the true anatomy of man's body," 1548, abridged from an early work on the subject written in English.

Master of the Barber-Surgeons Company. In Holbein's picture, Henry VIII is presenting a document to Vicary, whose portrait is carefully painted.

1493-1571.—Arcaeus, Francisco Arceo, of Fregenal, Spain. Surgeon and successful operator. His name is perpetuated in the Balsamum Arcaei (unguentum elemi). His treatise on wounds was translated into English in 1588 and includes a method of treating club-foot with a shoe which he invented for the purpose.

ca. **1510** (?).—**Gonzalo Fernandez.** Introduced the use of guaiacum in the treatment of syphilis.

1494-1553.—François Rabelais. Originally a monk. Studied medicine and became professor at the University of Montpellier. Held the chair of pathology for a year at least and lectured on the Greek text of the Hippocratic Prognostics to crowded audiences. Later he was attached to the Lyons Hospital. He displayed profound knowledge of the medical sciences of his time. Curé of Meudon as well as practising physician. The great exponent of Renaissance humanism. One of the first to translate the Aphorisms of

Hippocrates, Lyons, 1532. Famous also as the author of "Gargantua et Pantagruel."

1497-1558.—Fernelius, Jean François Fernel. Professor of logic and afterwards of medicine at Paris. Physician to Henry II and Catherine de Medici. He taught that physicians should study the human body and not accept tradition. He also stated that the cause of disease was to be looked for in the body itself and not in the fluids occasioned by the disease. His learning and scholarship were so great that the contemporary physicians said of him, that, "Fæces Arabum melle Latinitatis condidit."

1497-1565.—Michel Angelo Biondo. Born in Venice. Practised at Naples and Rome. Used warm and cold water in the treatment of wounds. He translated into Italian the history of plants, written by Theophrastos.

1498-1560.—Hieronymus Bock, or Tragus. Physician of Zweibrücken. Studied botany and became superintendent of the gardens of the prince. He wrote the "Neuer Kreutterbuch" (1539).

1499-1569. Nicolo Massa. Professor of anatomy and surgery at Padua. Author of works on the

prostate and on contagious diseases, including plague, small-pox and syphilis. For the latter he recommended preparations of mercury and sarsaparilla. Discovered the lymphatics of kidney, 1532. Author of "Anatomiae liber introductorius" (1559), "De Gallico Morbo" (1559), and "Epistolae Medicinales" (1542).

1449-1519.—Magnus Hundt. Studied philosophy, medicine and theology at Leipsic. He published in 1529 "Nuetzlich Regiment" which contains references to syphilis and the sweating sickness. Hundt published some very crude anatomical illustrations in his "Anthropologia de Hominis . . . Natura," 1501.

ca. **1480. — Laurentius Phryesen.** City physician of Metz. Anatomist who published in 1518 "Spiegel der Artzny," containing two woodcuts, which are much superior to any then known, and are a great improvement on those of Hundt.

b. **1530.—Leonardo Botallo.** Prebendary of the Abbey of St. Marie de Chelles, near Meux. Author of "De via sanguinis a dextro ad sinistrum cordis ventriculum," Venice, 1640, in which he describes the duct which bears his name. He revived the disputes about venesection by recommending it in almost all diseases, advocating the withdrawal of large quantities of blood four or five times in an acute attack.

1500-1555.—Antonio Musa Brassavola, of Ferrara.

The first of his time to reintroduce tracheotomy. He wrote on syphilis, and published a botanical treatise in the form of an imaginary dialogue, a method which was followed by Gale, Bullin and other medical practitioners in England a few years later.

1500-1558. — Jacob Rueff. Surgeon and author of a work on midwifery, in which he describes smooth and toothed forceps for the extraction of the dead fœtus. Town physician at Zurich. He also cut for stone and wrote comedies, some of which were played. He recommends cephalic in addition to podalic version.

1500-1569.—Vidus Vidius, or Guido Guidi, of Florence. Chief physician to Francis I and Cosmo di Medici. Professor of medicine in the Collège de France which he reorganized. He wrote on anatomy, and has given the name to the Vidian canal and the Vidian nerve. A friend of Benvenuto Cellini, who was godfather to his daughter. He published his "Chirurgia," which was printed by Pierre Gauthier, 1544, and an illustrated anatomy edited by his nephew, 1611, and a Latin translation of the Surgery of Hippocrates.

1501-1566.—Leonhard Fuchs. Professor of Medicine at Tübingen. Botanist and author of "De Historia Stirpium," Basel, 1542, written to teach medical botany. It is illustrated with fine woodcuts. He also wrote commentaries on Galen and Hippocrates.

1501-1576.—Hieronymus Cardanus of Pavia. Professor at Milan in 1534. He professed a firm belief in astrology, which he called to his aid in the explanation of symptoms and the administration of laxatives.

1501-1577.—Pietro Andrea Mattioli. Botanist and author of the well-known commentary on Dioscorides, Venice, 1544, which passed through many editions.

1501-1580.—Christobal de Vega. Physician and author of a work entitled "De arte medendi liber."

1503-1564.—Charles Estienne. Stephanus of Paris. A pupil of Sylvius. Professor of anatomy. Author of "De dissectione partium corporis humani," 1545, which contains a description of syringomyelia. Described the difference between the white and grey matter of the brain. An ardent Galenist, but made some original discoveries.

1504-1583.—Francois Valleriola. Professor of medicine in Turin and author of several works. He wrote "Enarrationum medicinalium libri sex," Lyons, 1554, "Loci medicinae communes, tribus libris digesti," Lyons, 1562.

1505 (?) 1584.—Richard Caldwell, M.B.Oxon. President of the Royal College of Physicians, London, 1570. He founded, with the assistance of Lord Lumley, the lectureship on surgery at the College of Physicians of London still known as the Lumleian lecture. William Harvey

announced his discovery of the circulation of the blood whilst acting as a Lumleian lecturer.

1505.—Royal College of Surgeons of Edinburgh founded.

1505(?)-1551(?).—Pierre Franco. Born in Provence. Practised in Berne, Freiburg, Lausanne and Orange. Surgeon and Huguenot. The first surgeon of his time to perform suprapubic lithotomy. He also wrote on hernia. He was a surgical genius and a bold operator, though an unlettered man.

1507-1566.—Guillaume Rondelet. Professor of anatomy at Montpellier. Writer on Natural History and author of "De Piscibus Marinis Libri XVIII" (Lyons, 1554) and "Methodus curandorum omnium morborum corporis humani in tres libros distincta" Paris, 1575. A friend of Rabelais.

1507-1587.—Thomas Gale. Army surgeon under Henry VIII and Queen Elizabeth and Master of the Barber Surgeons Company. Opposed the theory that gunshot wounds were poisoned and advocated simple treatment. Author of "An excellent treatise of wounds made with gunshot," 1563, "An Enchiridion of Chirurgerie," 1563, "The Institution of Chirurgerie," which is written in the form of a dialogue, and other treatises.

1509-1553.—Michael Servetus. Born at Villanueva *Da Sigena* in Aragon. Physician and theologian. First of the Unitarians. He pointed out that the blood passed into the heart after being mixed with air in the lungs. He graduated M.B. at Lyons under the name of Michel Villeneuve, practised at Paris, wrote a treatise on syrups. Fellow prosector with Vesalius to Winter in Paris. Lectured on and edited works of Ptolemy. Wrote the "Christianismi Restitutio" in 1553 and was burnt alive at Geneva as a heretic at the instigation of Calvin.

1509-1590.—Ambroise Paré. Famous military surgeon. Born at Bourg-Hersent, Maine. As a barber-surgeon became attached to the Army at the age of 19. Appointed surgeon to King Henry II; and afterwards to Francis II and Charles IX of France. He discarded the use of boiling oil as a cautery after amputations and reintroduced the use of the ligature and employed cold dressings. Improved the method of trepanning and devised numerous instruments. It is claimed

for him that he was the first to practise forced delivery in protracted labour and to observe metastatic abscesses in cases of blood-poisoning from wounds.

1510-1558.—Robert Recorde, M.D.Camb. Fellow of All Souls, Oxford, Physician to Edward VI and Mary. Author of "The Judicial of Urines." 1548, "Urinal of Physic," 1548, "The Castle of Knowledge," "The Whetstone of Wit," also works on arithmetic, anatomy and auricular confession. Died in a debtors' prison.

1510-1573.—John Caius or Keys, M.D.Padua. Studied in Italy where he was diligent in seeking complete and correct versions of Galen and Hippocrates. Nine times President of the College of Physicians, London. Founder and first Master of Caius College, Cambridge, 1557. Lectured on anatomy for nearly twenty years at the Barber-Surgeons' Hall in London. Wrote a treatise on the Sweating Sickness and another on "English Dogs."

1510-1580.—Giovanni Fillippo Ingrassias, of Recalbuto, Sicily. Called "The Sicilian Hippocrates." Osteologist and myologist. Pupil of Vesalius. Professor at Naples. Discovered the stapes. Saved his country from plague in 1575. Was Protomedicus of Sicily, 1563, and became Physician to Philip II. The processes of Ingrassias still remain in anatomical nomenclature.

1511-1568.—Amatus Lusitanus. A Portugese Jew. Studied at Salamanca. Practised at Ragusa in Dalmatia and afterwards at Salonica. He wrote on Dioscorides and studied the valves in the blood-vessels. His book "Curationum medicinalium centuriæ septem" 1566, passed through eleven editions.

1511-1575.—Hadrian Junius. Called "The Light of Holland." Pupil of Fernelius, physician to the Duke of Norfolk, afterwards Rector of the Latin School at Haarlem, and historian of the States of Holland. Town physician at Haarlem and Middleburg. He wrote a treatise correcting various mistakes in preceding medical writers as well as an essay on the hair.

ca. 1540-1560.—Thomas Geminus. Probably an Italian, who is said to have settled in London, though he calls himself "of Leeds." Published his "Compendiosa totius Anatomie delineatio aere exarata" in 1545. The first edition is dedicated to King Henry VIII, and is one of the earliest books containing copper plates produced in England. The first to engrave the illustrations of Vesalius on copper.

1513-1572.—Giovanni Argenterio of Castelnuovo in Piedmont. Professor of Medicine in Pisa, Naples, Rome and Turin. He opposed Galen's theories as to the cause of disease and held that medicine lay intermediate between a science and an art.

1514-1564.—Andreas Vesalius of Brussels. Famous Anatomist. He declared that Galen's Anatomy was based on the lower animals and was the first to use woodcuts drawn from nature to illustrate his works. He revised the old theories on anatomy, and replaced them by new and original facts based on his own experience. Became Professor of Anatomy at Padua, and also taught at Pisa and Bologna. His work was vigorously opposed. He was appointed Physician to Charles V, gave up the study of anatomy, and died at Zante whilst returning from a pilgrimage to Jerusalem. Author of "De Humani Corporis Fabrica," 1543, of which an edition on better paper was issued in 1555.

1515-1544.—Valerius Cordus. Discoverer of sulphuric ether and the inventor of phytography. He wrote a commentary on Dioscorides published in 1561 by Gesner. It describes 500 new species of plants. His "Dispensatorium," 1524, was recognized as an official pharmacopœia for that city by the Senate of Nuremberg.

1515-1579.—Gianbattista Canano. Professor at Ferrara and physician to the Duke of Ferrara and Pope Julius III. Described the valves in the vena azygos in 1546 and studied their action.

1515-1588.—Wierus or Johann Weyer of Grave in Brabant. Opposed belief in witches. Author of works on epidemic diseases, sweating sickness and scurvy. Travelled in Africa and Greece and became physician to Duke William of Cleves.

1516-1552.—Bartolommeo Maggi, of Bologna. Surgeon. Contradicted the theory that all gunshot wounds were poisoned. Advocated the employment of soft oiled dressings.

1516-(?) 1559.—Realdus Columbus or Matteo Realdo Colombo of Cremona. Anatomist. Pupil, deputy and successor to Vesalius at Padua and Professor in Rome, 1548. Described the thyroid gland and was the first to demonstrate that blood passed from the lungs into the pulmonary veins; possibly borrowed this idea from Servetus. Used dogs for vivisection instead of hogs. Author of "De re anatomica," 1559, which was long used as a text-book and is an imitation of Vesalius, whom he opposed.

1516-1565.—Conrad Gesner of Zurich. Physician, medical biographer and naturalist, called "The German Pliny." Professor of Natural History at Zurich. The first to attempt classification in natural philosophy and to describe the canary bird. A man of extraordinary industry whose volumes on the history of plants and the history of animals long remained text-books and were translated from the Latin.

1517-1585.—Rembert Dodoens, of Malines, Belgium. Anatomist, physician and botanist. Physician to Maximillian II and Rudolf II. His illustrated herbal was printed in 1583.

d. **1576.—William Bullein.** Physician and botanist. Rector of Blaxhall, Suffolk. Author of "Bulwarke of Defence against all Sickness etc.," 1562, written whilst he was imprisoned for debt after being charged with murder. All his writings are excellent reading.

1518.—Royal College of Physicians of England founded.

1518-1564.—Pierre Belon. Natural historian. He travelled through Greece, Egypt and Asia Minor from 1546-1549 to investigate the source of drugs and to search for plants with medicinal properties. He wrote a book "De Arboribus Coniferis" which was printed in Paris in 1553.

1518-1575.—Felix Wuertz of Basle. A clinical surgeon. He followed Paracelsus in ignoring the earlier methods, trusting the healing power of Nature. Pus he regarded as a bad sign, fractures he treated with splints, performed amputations of the thigh, and insisted on the endeavour to obtain healing by first intention.

1519-1586.—Johann Crato von Kraftheim. Physician to Ferdinand I, Maximillian II and Rudolf II. A member of the Rudolphine Academy of Medicine at Prague.

1520-1574.—Bartolommeo Eustachi. Professor of anatomy at Rome. Discoverer of the Eustachian tube, the origin of the optic nerve and the thoracic duct which, however, he thought was peculiar to the horse. He prepared a series of thirty-eight anatomical plates which impoverished him. He died before they were published, and they did not appear until 1714 when **Lancisi** issued them with a Commentary. Published a small anatomical work in 1564, and was the first to study the teeth.

1520-1606.—Luis Mercado (Mercatus). Physician in ordinary to Philip II and writer of works on plague, typhoid and other epidemic diseases.

ca. **1520.—Augustine.** Physician to Cardinal Wolsey.

ca. **1560.—Juan Valverde di Hamusco of Castilla la Viega.** Eminent Spanish physician, pupil of Realdo Colombo and Bartolommeo Eustachi. Said to have carried the knowledge of anatomy from Italy to Spain. Published in 1560 "Anatome," an illustrated abstract of Vesalius. Author of "Historia de la composicion del cuerpo humano," Rome, 1556.

ca. **1562.—Thomas Gibson, of Morpeth.** Physician and printer. He printed a concordance to the New Testament in 1535, a treatise on the pestilence in 1536 and the "Great Herbal" in 1530.

ca. **1564.—Leonardo Fioravanti of Bologna.**—Physician.

Believed that syphilis originated from feeding animals upon the flesh of their own species.

ca. 1568.—**William Turner.** Physician and botanist. Born at Morpeth, educated at Cambridge. Practised in Germany after the burning of his friend Bishop Ridley. Became Dean of Wells. Author of "A New Herbal," printed in 1551.

1520-1584.—**Pedro Ponce of Leon.** Benedictine monk and physician. Founder of a system of instruction for the deaf and dumb based upon that of Hieronymo Cardano. He first taught his pupils to write, then pointed out to them the various objects represented by the different words, and finally conveyed to them the sounds corresponding to the characters by observation of the motion of the lips.

1520—1590.—**Jac. Theod. Tabernaemontanus.** Physician to Elector of Speyer. Studied and wrote on botany and medicinal springs. Author of "Neu Kreuterbuch," first published in 1588 and several times reissued.

1521-1580.—**Jacob Baumann.** Swiss surgeon. Educated at Zurich and Bologna. Practised at Nuremberg. The first translator into German of the anatomy of Vesalius.

1522-1597.—**Petrus Forestus.** Dutch physician, educated in Italy and practised at Delft. He collected a series of cases which shows him to have been

a great clinical physician and at the same time gives a clear insight into medical practice at the end of the sixteenth century.

1522-1605.—**Ulysses Aldrovandi of Bologna.** Established a botanical garden at Bologna in 1567. Studied zoology as well as botany and left a collection of natural curiosities to his native city. Author of "Ornithologia" in three vols., 1599-1603; "De Insectis," 1602; and "De Piscibus et de Cetis," 1613.

1523-1562.—**Gabrielle Falloppius of Modena.** Surgeon and professor at Ferrara, Pisa and Padua. Made important and numerous discoveries which added greatly to the existing knowledge of anatomy. The oviducts are still called after his name—the Falloppian tubes—though they had been recognized by Galen, Soranus, Rufus and Theophilus. First to describe Poupart's ligament. Published also works on anatomy, pharmacy and medicine.

1524-1603.—**Andreas Caesalpinus.** Professor of medicine and botany at Pisa and afterwards at Rome. Physician to Clement VIII. Classified plants artificially in accordance with their organs of reproduction. Claimed by the Italians as the discoverer of the circulation of the blood

before Harvey. Wrote on medicine, plants and metals.

1526-1609.—**Clusius, Charles de l'Ecluse.** Botanist. Travelled extensively and was Director of the Court Botanical Gardens at Vienna, and afterwards Professor of Botany at Leyden. Author of "Antidotarium florentinum," 1561, and "Aromatum et simplicium aliquot medicamentorum apud Indos," 1567.

1528-1586.—**Adam Lonicerus.** Professor of mathematics at Marburg. Was town physician at Frankfort and author of a "Naturalis historiæ opus" in 2 vols, 1551, also the "Neue Kräuterbuch," Frankfort, 1557.

1528-1591.—**Anuce Foes or Foësius.** Born at Mayence. Physician to Charles III, Duke of Loraine. He published in 1561 a Formulary which was one of the last unofficial Pharmacopœias; also an edition of Hippocrates, 1591-1624.

1529-1568.—**John Halle.** Surgeon, of Maidstone in Kent. He published in 1565 an English version of Lanfranc's Surgery and added to it a lively essay entitled "An Historiall expostulation against the beastlye abusers both of chirurgerie and physyke in oure tyme." It is a philippic against quacks and is excellent reading.

1529-1583.—**Laurent Joubert of Valence.** Professor and afterwards Chancellor of the School of Montpellier. He wrote a book on popular errors in

medicine, which had a very large circulation. He asserted that foul odours were no certain evidence of putridity and rejected Galen's doctrine of forces.

1530-1589.—Julius Cæsar Arantius. Professor of medicine, surgery and anatomy at Bologna. Remembered for his careful work on the valves of the heart and by the "nodules of Arantius." First to write a description of the coraco-brachialis as a separate muscle. Published "De humano Foetu," 1571, "De tumoribus," 1581, and a commentary on Hippocrates' "On wounds of the head," 1579.

1530-1598.—Johann Schenk of Freiburg in Breisgau. Author of work on Monsters, which was frequently reprinted.

1530-1595.—Leonhard Thurneysser, of Thurn. Began as a collector of herbs for Hüber, a physician of Bâle. After an adventurous career he settled at Frankfurt-on-the-Oder and became physician in ordinary to the Elector Georg. Later he practised as an astrologer and built a laboratory in Berlin, where he established its first botanical and zoological garden.

1530-1606.—Heironymus Mercurialis. Professor of medicine at Padua, Bologna and Pisa. Exponent of medical gymnastics and the author of the first treatise on diseases of the skin, "De morbis cutaneis" Venice, 1570.

1533-1610.—John **Banister of Nottingham**. Anatomist and surgeon. He lectured at the Barber-Surgeons' Hall. Wrote several works on surgery of which a collected edition was published in 1633. He is not to be confused with **Richard Banister** of Stamford, who wrote on diseases of the eye and died in 1626. Served as army surgeon to the Earl of Warwick's force at Havre and Leicester's expedition to the Low Countries. Worked in London with Wm. Clowes. Author of "A needful, new and necessary Treatise on Chirurgery," 1575, "The History of Man sucked from the Sappe of the most approved Anatomists," 1578, and "A Compendious Chirurgery," 1585.

1533-1610.—**Roch le Baillif de la Rivière**. Physician in ordinary to Henry IV.

1534-1600.—**Volcher Coyter of Gröningen**. Town physician at Nuremburg and surgeon in the French Army. Pupil of Falloppius, Eustachius and Rondelet. Author of "De ossibus et cartilaginibus," 1566, and works on human and comparative anatomy in which he made great progress. Described the corpus luteum, noted that the contraction of the auricles precedes that of the ventricles and recorded important observations on the brain.

1534-1617.—William Butler, of County Clare in Ireland. An alchemist, who was greatly esteemed by James I. Claimed to have discovered a stone, by means of which he cured the most dangerous diseases. It was investigated by Sir Kenelm Digby.

1535-1606.—Georg Bartisch. Surgeon and court-oculist to the Elector of Saxony. Author in 1583 of an illustrated book on ophthalmic operations "The Augendienst," 1583, and a skilful operator on the eye. He distinguished between the various forms of cataract, and operated in many ophthalmic diseases. He also wrote on lithotomy. Sought to show that many of the delusions about witchcraft were attributable to errors of sight.

1540-1604.—William Clowes. Came of a Warwickshire family: served in France in 1563 as an army surgeon under the Earl of Warwick. Surgeon to Queen Elizabeth in 1596, and surgeon to St. Bartholomew's Hospital. Author of "A proved practice for all young chirurgians," 1591. His works are still worth reading for their graphic details of the practice of surgery in England in the sixteenth century. His son William Clowes [1582-1648] was surgeon to Henry, Prince of Wales and to Charles I.

1536-1614.—Guillaume Baillou, of Paris. Said to have been the first to demonstrate post mortem the existence of croup, and in 1578 to declare

whooping-cough as a hitherto undescribed form of disease.

1536-1614.—Felix Plater. Anatomist and Physician to the Margrave of Baden. Professor of practical medicine at Bâle. Earliest systematic nosologist. He divided diseases into the following three classes : (1) the Mind, the senses and of motion ; (2) Febrile, and diseases of the fluids ; (3) Defects of formation and secretion. He was one of the earliest anatomists in Germany to dissect the human body. The family of Plater gave four generations of distinguished men to medicine. He and his step-brother, Thomas, are known by their delightful diaries, giving a vivid picture of student life at Montpellier in the sixteenth century. Published "De corporis humani structura et usu," 1583.

1537-1619.—Hieronymus Fabricius Ab Aquapendente.

Physician and surgeon. Said to have been the first to distinguish anatomically between gôitre and other tumours of the neck. A pupil of Falloppius ; William Harvey was his pupil at Padua, where he was professor of surgery for thirty years. First to describe the valves in the veins. Published works on anatomy, embryology and surgery. Invented several instruments and orthopædic appliances.

1538-1616.—**Matthaeus Lobelius (L'Obel).** Born at Lille, studied at Louvain and Montpellier. Physician to William of Orange. He was invited to England by James I (to whom he became physician in ordinary) on account of his knowledge of botany. The plant Lobelia is named after him. Author of "Plantarum seu stirpium historia." Antwerp, 1576.

1538-1616.—**Mercurius, or Scipione Mercurio.** Born in Rome, educated at Bologna and Padua, and entered the Dominican monastery at Milan. Leaving the monastery, after travelling, he practised with success in Padua and Venice He wrote "La Commare o raccoglitrice," in 1595, the first Italian work on midwifery, pointed out the value of operation in contracted pelvis, illustrated the "hanging legs" position for delivery in cases of contracted pelvis, and showed the method of bimanual version.

1540. — **Company of Barber Surgeons of London** founded by Act of Parliament.

1542 1602.—**Peter Severin, or Peder Soerensen of Ribe in Jutland.** Physician in ordinary to King Friedrich II. Follower of Paracelsus and his doctrines. His work "Idea medicinæ philosophicæ" was highly thought of by Sir Frances Bacon.

1540-1603. — William Gilbert, of Colchester. M.D. Cantab. Physician to Queen Elizabeth and James I. "The father of experimental philosophy." Discoverer of static electricity and magnetism, and author of "De Magnete," 1600, the perusal of which led Galileo to study magnetism. He was President of the College of Physicians of London, in 1600. Dryden wrote of him "Gilbert shall live till loadstones cease to draw."

1540-1600.—Salomon Alberti. Professor of physic at Wittenberg. Author of "Historia plerarumque partium humani corporis," 1581, which contains many interesting observations.

1542.—First edition of the "Fabrica" by Vesalius printed at Bâle.

1543-1575.—Constantine Varolio. Professor of anatomy and surgery at Bologna and Rome. Physician to Pope Gregory XIII. Published his "Anatomia," 1573. The first to study carefully the base of the brain, the origin of the nerves and to describe the pores of the skin. Said to have discovered the valve of the colon. His name is preserved in the Pons Varolii.

1543-1601.—Jan van Heurne, of Utrecht. M.D.Padua. Physician to Count Egmont, and professor at

Leyden, where he introduced the clinical teaching of medicine. He prepared an excellent edition of the works of Hippocrates.

1546-1599.—Casper Tagliacozzi, of Bologna. Became famous for his work on the restoration of the nose and rhinoplastic operations, which were so condemned by the Church that his body was exhumed and buried in unconsecrated ground. Pioneer in rhinoplasty and author of "De Chirurgia curtorum per insitionem," Venice, 1597.

1547.—St. Mary of Bethlehem Hospital for the insane founded in London, though Bedlem had been used as an asylum since 1377.

1546-1609.—Quercetanus, or Joseph du Chesne. Born in Gascony. Physician in ordinary to Henry IV. The first physician in France to recommend the antimonial remedies described by Paracelsus. Practised in Bâle and Geneva. Studied the action of air on wounds.

1550-1613.—Jacques Guillemeau. Succeeded Paré as physician to Charles IX of France. Enriched both surgery and obstetrics and wrote a book on the diseases of the eye. His collected surgical works were translated into English and into Dutch.

1550-1616.—Timothy Bright. M.D., Cantab. Physician to St. Bartholomew's Hospital and afterwards Rector of Methley, near Wakefield in Yorkshire. Author of "A treatise on melancholy," and an epitome of "Foxe's Book of Martyrs." By his

book "Caracterie: an arte of shorte, swifte, and secrete writing, by character," 1588, he became the father of modern shorthand. The book was reprinted in 1888.

1550-1610.—Peter Lowe of Glasgow. Surgeon; studied in Paris and travelled much abroad. Author of "The whole course of chirurgerie," 1596, and other works. Founded the Faculty of Physicians and Surgeons in Glasgow in 1599.

1553-1617.—Prosper Alpino. Natural Historian and Botanist. He travelled through Egypt, Crete and Greece from 1580 to 1583. He wrote on plants and became professor of botany at Padua. He wrote "De plantis Ægypti liber," 1592, "Historia Ægypti naturalis," and "De medicina Ægyptorum," 1591. He was the last of the "Methodists" and was for some time associated with Andrea Dorea for whom he went to Geneva.

1554-1636.—Giovanni Baptista Cortesi. Professor of anatomy and surgery in Bologna and Messina. He practised rhinoplastic surgery.

ca. **1593.—Etienne Gourmelen.** Professor of surgery at Paris and opponent of Ambroise Paré, who wrote a stinging reply to him in 1580 in which he calls him derisively "mon petit maître."

d. **1600.—Thomas Muffett.** Physician and entomologist: practised in London and Ipswich. He wrote on dietetics and a work entitled "Nosomantica Hippocratica, seu Hippocratis prognostica cuncta," Frankfort, 1588. "Health's improvement, or rules comprising and discovering the nature, method, and manner of preparing all sorts of food used in this nation," London: 1655.

ca. **1596.—Albertino Bottoni.** One of the first to give actual clinical instruction in Padua. He was a keen observer and wrote a treatise on gynæcology.

1556- (?) **1643.—John Woodall.** English surgeon. Practised in Poland, returned to England in 1599. Surgeon-General of the East India Company in 1613. Surgeon to St. Bartholomew's Hospital, 1615. Author of "The Surgeon's mate," 1617, "The Viaticum," 1628, and other treatises on surgery. He drew attention to the value of lime juice for sailors on long voyages.

1558-1609.—Andreas du Laurens of Arles. Chancellor of Montpellier and afterwards physician in ordinary to Henry IV of France. Author of "Historia anatomica humani corporis," Paris, 1589. It went through several editions. Recalls that the King had cured 1,500 persons suffering from the King's Evil or scrofula by touching them.

ca. **1602.—Florian Matthis.** Performed the first gastrotomy in 1692 to remove a knife which had been swallowed.

1560-1624.—Fabricus Hildanus, or Wilhelm Fabriz, or Fabry, of Hilden, near Düsseldorf. Surgeon. Educated at Cologne. Practised in Switzerland, settling eventually in Berne. Invented many instruments, and specially studied the eye and the ear. Is regarded as the father of German surgery, and wrote "Observationum et curationum chirurgicarum centuria," first published at Bâle in 1606 and frequently reprinted. He laid great stress on anatomy. By his social and professional attainments he did much to raise surgery amongst the German-speaking races to a higher position than it had ever held. His wife, Maria Collinet, was also a surgeon and had charge of his practice during his absences. She was the first to conceive the idea of removing metallic particles from the eye by means of a magnet.

1560-1624.—Gaspar Bauhine. M.D., Bâle. Botanist and chief physician to the city of Bâle and to the Duke of Würtemberg. Became director of the University, professor of Greek, botany, anatomy and medicine successively. Published anatomical and botanical works.

1561-1616.—Julius, or Placenterius Casserius. Pupil, assistant and successor of Fabricius at Padua.

Published "Tabulae," 1627, in which the coracobrachialis is described as a separate muscle. He paid special attention to the anatomy of the organs of voice and hearing. His "De vocis auditusque organis" was published in 1601.

1561-1636.—Sanctorius, Santorio. Physician and professor at Padua. Devised an instrument for investigating the pulse, and a kind of thermometer for taking the temperature of the healthy and sick, as well as a machine for weighing himself before, during and after a meal. He was thus the founder of the physiology of metabolism. His book, "De medicina statica aphorisma" passed through twenty editions between 1614 and 1736.

ca. **1562.—Louise Oliva Sabuco.** Born at Alcarez, la Manche, Toledo, eminent Spanish philosopher; she endeavoured to dethrone Galen and the Arabs from the exalted position which they held in contemporary philosophy and medicine. She was not a medical woman, but displayed profound knowledge of the classical medical writers and of contemporary anatomy and physiology. Some of her ideas on pathology and epidemiology were far in advance of her time

1563-1636.—Louise Bourgeoise, or Boussier. Accoucheuse to the French Court. One of the pioneers of scientific midwifery. Published "Observations divers sur la sterilité," 1609,

which was the vade mecum of midwives of the time, also "Récit véritable de la naissance de messeigneurs et dames les enfants de France," which had a great reputation.

1568-1640.—Baldwin Hamey. Born at Bruges, studied at Leyden. Physician to the Czar Theodore Ivenowitz. Returned to Holland 1598, and afterwards settled in London.

1569-1728.—The Chamberlens. A family of Huguenot refugees practising surgery and midwifery in England from 1569-1728. The father, William, was followed by two sons both called Peter, one son James and one Simon. The two Peters were members of the Barber Surgeons' Company in London and the younger was licensed to practise midwifery by the Bishop of London in 1600. He died in 1626. Peter the elder was repeatedly arraigned by the College of Physicians for practising physic instead of confining himself to surgery. Peter the grandson, son of Peter the younger, was born in 1601, and graduated M.D., Padua, in 1619; he died in 1683. Hugh, the elder son of Peter the grandson, was born in 1630. Paul, his brother was born 1635 and died 1717. John, another brother, died about 1700.

Peter Chamberlen, 1658.

Hugh the younger, son of Hugh the elder, was born in 1664 and took the M.D.Cantab. in 1689 and died in 1728. All these Chamberlens practised midwifery with great success and most of them attended the Queens of the time. It is uncertain when exactly the obstetrical forceps associated with their name were invented, but there is proof that the profession was well aware in 1634 that the family used special "instruments of iron." The Chamberlens endeavoured to sell the secret of their forceps to Mauriceau and to the British and French Governments, but eventually disposed of it to Roon Ruysen in Holland. It was soon after acquired by the Medico-Pharmaceutical College of Amsterdam, which imparted the secret to their licensees for a large sum.

1572-1632.—**Theodore Goulston**. M.D., 1610. Fellow of Merton College, Oxford. Practised at Wymondham and in London and wrote works on Aristotle and Galen. Endowed a lectureship at the Royal College of Physicians, "to be read by one of the four youngest doctors of the College." "He was an excellent Latinist and a noted Grecian, but better for theology."

1572-1640.—**Edmund Deane**. Educated at Merton College, Oxford, practised at York. Published in 1626 "Spadacrene Anglica," which first called attention to the value of the Harrogate

medicinal waters. The book passed through several editions and was reprinted in 1921.

1574-1637.—**Robertus de Fluctibus. Robert Fludd,** M.D.Oxon. Physician, alchemist, mystic and philosopher. Was interdicted from practice by the College of Physicians, of which he was a member.

1575-1635.—**John Hall.** Married at Stratford-on-Avon, in 1607, Susannah, the elder daughter of Shakespeare, and through her inherited New Place. He practised medicine but does not appear to have received any licence or university degree though the register of his burial describes him as "medicus peritissimus." Some notes of his cases were published by James Cooke in 1657.

1575-1655.—**Thomas Winston.** M.D.Padua and Cambridge. Professor of Physics at Gresham College, 1615-1642. His anatomy lectures were published posthumously in 1659. They recognized Harvey's work and were considered the most accurate and complete of their time.

1577-1644.—**Jean Baptiste van Helmont.** Capuchin Friar. Physician and chemist, Born in Brussels, travelled through Europe, died at Vilvorde, near Brussels. Revived the doctrine of Paracelsus and founded a system of mysticism. "'The Faust' of the 17th century,"

and founder of the iatro-chemical school. He described gas sylvestre or carbon-dioxide and made some advance in the analysis of urine.

1577-1657. **Johann Riolan the Younger**. Surgeon and anatomist of Paris. Author of works on anatomy and surgery, now best remembered as the opponent of Harvey's teaching on the circulation of the blood. Harvey spoke of him as "The prince and leader of all the anatomists of the present age," but Huxley wrote of him as "a tympanitic Philistine who would have been none the worse for a few sharp incisions." Wrcte "Ars bene Medendi," Paris, 1601, and "Opera cum physica tum medica," Frankfort, 1611.

1578-1657.—**William Harvey, of Folkestone.** Discoverer of the circulation of the blood. Lumleian lecturer on anatomy and surgery at the College of Physicians in London, and physician to St. Bartholomew's Hospital. Physician to James I and Charles I. After researches extending over twenty-six years, he published his immortal work, "Exercitatio anatomica de motu cordis et sanguinis," at Frankfort-am-Main in 1628, in which he described his famous discovery which revolutionized all the theories and

systems prior to his time and laid the foundation of modern physiology.

1578-1625.—**Adrian Spigelius, or van den Spieghel.** Flemish anatomist and physician. Professor of surgery and anatomy at Padua. Published "De corporis humani fabrica," Lib. 10, 1627.

1579-1647.—**Cesare Magati of Scandiano.** Operating surgeon and professor at Ferrara. Simplified the treatment of wounds. Author of "De rara medicatione vulnerum," printed in 1616. He believed that gunshot wounds were not poisoned.

1580-1609.—**Oswald Croll.** Physician to Prince Christian of Anhalt-Bernburg. A follower of Paracelsus and member of the Rudolphine Academy of Medicine at Prague. Author of "Basilia Chymica," which was repeatedly reprinted. He published a formula for the preparation of calomel.

1580-1656.—**Marco Aurelio Severino, of Tarsia, Calabria.** Surgeon and professor at Naples. A skilful operator and forerunner of modern comparative anatomists. He wrote "Zootomia Democritea" in 1645.

1581 (?)-1626.—**Gasparo Aselli, of Cremona.** Professor of anatomy at Padua. Discovered the lacteals in 1622, which had, however, been observed by Erasistratus. His discovery was not published till after his death in his "De lactibus," 1627. It contains the earliest anatomical

illustrations printed in colour. His name remains in the "pancreas of Aselli."

1586-1641.—**Alexander Reid, Rhead, Read.** Surgeon. Lecturer on anatomy at the Barber Surgeons' Hall, 1632-1634. Published "A description of the body of man," "The manuall of anatomy," 1634; "Treatise of the muscles of the body of man," 1659; and "Treatise of the first part of chirurgerie," 1638; &c. His works had a great reputation, but they are dull reading.

d. 1589.—**Melchior Wieland.** Professor of medicine and botany at Padua and superintendent of the botanical gardens of that city.

d. 1643.—**Johann Georg Wirsung.** Professor of anatomy at Padua. He described the pancreatic duct which bears his name in a letter to Riolan in 1642. Copper prints of the original dissection still exist. He was assassinated when entering his house at night; it is said this was due to a quarrel between his pupil Hoffmann and himself as to the discovery of the duct.

1588-1654.—**Olaus Worm.** Professor of humanities at Copenhagen, and Rector of the University. Afterwards professor of physic and medicine. Published works on ancient literature and medicine. The "Wormian bones" which he described had already been noted by the ancients.

1590.—**First compound microscope** made by Hans and Zacharias Janssen.

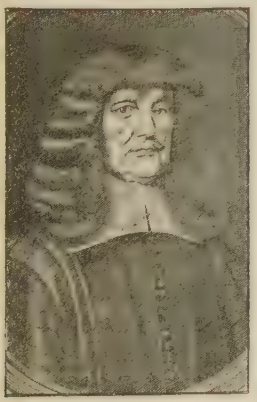
1592-1631.—**Jacobus Bontius.** Came of a distinguished medical family in Holland. Was born at Leyden and became inspector of surgeons and afterwards Advocat-fiscal in the Indies. His works on tropical medicine were published posthumously in 1646 and were translated into English. Described beri-beri.

1593-1672. —**Nicholas Tulpius.** Dutch anatomist. The central figure in Rembrandt's "The lesson on anatomy." Known to history as the aged burgomaster whose intrepid patriotism prevented the surrender of Amsterdam to the French, 1672. First to describe "A man-like ape" (a young chimpanzee?). Published "Observationes medicae," 1641, called by Haller "a golden work." He strongly disapproved of the practice of publishing medical works in the vulgar tongue, believing that it would lead to a great increase in disease.

1595-1645.—**Johann Scultetus, of Ulm.** Surgeon. He describes a variety of methods of bandaging and the many-tailed bandage still in use is often called "Scultetus' bandage." Author of "Armamentarium chirurgicum," which

appeared posthumously in 1653, and ran through several editions, and of "Chyrurgeon's Storehouse," Englished by "E.B.," London, 1674.

1597-1677.—Francis Glisson. Regius Professor of Physic at Cambridge. One of the Founders of the Royal Society and President of the Royal College of Physicians of London. Discovered the cystic duct. Author of a work on the anatomy of the liver, "Anatomia hepatis," 1654, in which he described that investing sheath which is still known as "Glisson's capsule." Described "Rickets" in 1650, and published a work on the intestines, in 1676. One of the few physicians who remained in London throughout the plague.



1599.—Royal Faculty of Physicians and Surgeons of Glasgow established at the instigation of Master Peter Lowe.

1600 (?)-1644.—Thomas Johnson. Apothecary, botanist, Royalist colonel. Created M.D. at Oxford 1643. Died of wounds received in defending Basing House. Published in 1636 an enlarged and amended edition of Gerarde's Herbal.

1600-1676.—Baldwin Hamey. Son of Dr. Baldwin Hamey. Born in London, educated at Leyden and Oxford. Lectured on anatomy at the College of Physicians of London, to which he was a liberal benefactor. A series of MSS. remain unprinted at the College entitled "Bustorum aliquot Reliquiâ." They are a series of sketches of his contemporaries.

1602-1680.—Athanasius Kircher, of Fulda. Physicist and writer on astronomy and chemistry. Born in Geysa, entered the Jesuit order. Professor of mathematics and Hebrew in the Roman College at Rome. An Egyptologist. Sought the cause of infectious diseases, especially plague and anthrax; probably the first to employ the microscope in the investigation of these diseases. He wrote on magnetism and described hypnotism in certain animals, and wrote "Physiologia Kircheriana," "Ars Magnesia," 1631; "Scrutinium pestis," 1658.

1604-1689.—Sir George Ent. M.D.Padua. President of the College of Physicians, 1670 to 1675. Champion of Harvey; was largely responsible for the printing of Harvey's "De generatione." Charles II attended one of his anatomy lectures and knighted him in the Harveian Museum on the spot. Published an "Apology for the circulation of the blood" in 1641.

1605-1682.—Sir Thomas Browne, of Norwich. M.D. Cantab. Physician and author of "Religio Medici," 1642, "Pseudodoxia Epidemica," 1646, and "Hydriotaphia; or a discourse of Sepulchral Urns lately found in Norfolk," 1658. A master of the English tongue "pure and undefiled." His eldest son Edward Browne [1664-1708] was physician to St. Bartholomew's Hospital. He travelled much and wrote accounts of his journeys in 1673, 1677 and 1685.

1608-1679. — Giovanni Alfonso Borelli, of Naples. Physiologist and mathematician. Founder of the Iatromathematical School. Advanced the knowledge of physiology on mathematical lines. He endeavoured to explain the action of the muscles by the laws of the lever, and believed that digestion was a mechanical process. His book "De Motu animalium" was published posthumously at Rome in 1680 and 1681.

1609-1684.—Charles Spon. Graduated at Montpellier. Practised in Lyons. Physician to Louis XIV. Rendered great service by publication of foreign works in French, translated the Prognostics and Aphorisms of Hippocrates into Latin verse and also wrote a complete myology in rhyme.

1613-1685. –Nathaniel Highmore, of Sherborne in Dorsetshire. M.D., Oxon. Physician and ana-

tomist. A friend of Dr. William Harvey. Described the "Antrum of Highmore" in the superior maxillary bone—which had been noted by Casserius—the seminal ducts and the epididymis. He had a large practice and was a magistrate for Dorset. Published the "Corporis humani Disquisitio Anatomica" in 1651.

1614-1656.—**Thomas Wharton.** M.D., Oxon. Physician and anatomist. Physician to St. Thomas's Hospital. Investigated the pancreas and discovered the duct of the submaxillary salivary gland, which is called after him "Wharton's duct." Professor at Gresham College and lived in London throughout the plague. He was a friend of Isaac Walton.

1614-1672.—**Francois de la Boë** (Sylvius). Professor of medicine at Leyden. Follower of the Iatrochemical school, a fantastic system based on the elements of chemistry. He gave his name to the fissure of Sylvius in the cerebrum. One of the earliest advocates of Harvey's theory. Strove to re-establish the humoral pathology on a firm basis of chemical facts. A pioneer of bedside teaching. The first representation of his fissure appears in his contribution to the 1641 edition of the "Institutiones anatomicae" of Bartholinus.

1614-1680.—Conrad Victor Schneider. Professor of philosophy and medicine at Wittemberg. Physician to the Elector of Saxony. Author of "De Catarrhis" in which he put an end to the idea that nasal mucus comes from the brain.

1616-1654. — Nicholas Culpeper. English pseudo-physician and astrologer. Came into disrepute through translating the London Pharmacopœia into English. Published among other works "The English physician," 1653, and "An astrological materia medica," which had an enormous vogue. He knew his herbs well and his general advice was sound. He practised in Spitalfields and was wounded in the Civil War. There is no evidence that he ever graduated.

1616-1680. —Thomas Bartholinus. Anatomist, physician, archæologist and Judge of the Supreme Court. Son of Caspar Bartholinus [1585-1629] of Copenhagen. Wrote on the Unicorn and on Monsters. Professor of mathematics at Copenhagen, 1647, and of anatomy, 1648. Physician to the King of Denmark and Librarian to the University. He demonstrated the existence of the thoracic duct in 1652. His son, Caspar [b. 1654], also an anatomist, is remembered by "Bartholin's Glands" and "Bartholin's Duct," the duct of the sublingual gland.

1617.—Society of Apothecaries of London founded.

1618.—London Pharmacopœia first issued by the Royal College of Physicians. There were two editions

published in this year, the second being enlarged.

1618-1710.—Samuel Collins. M.D.Padua. President of the College of Physicians, 1695. Physician in Ordinary to Charles II. Anatomy reader to the College of Physicians. Author of "A System of Anatomy, treating of the Body of Man, Beasts, Birds, Fish, Insects and Plants," 1685, beautifully illustrated, but verbose. Goulstonian and Lumleian lecturer.

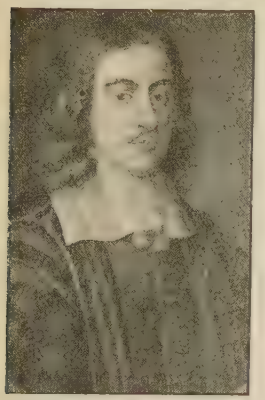
1620-1683.—Robert Morrison, or Modesy. M.D. Paris and Oxford. Botanist and physician to the Duke of Orleans, and botanist to the Royal Gardens in England. Sherardian professor of botany at Oxford. He was one of the first to make use of dichotomous keys to specific characters.

1620(?)-1704.—Jean Baptiste Denis. Professor of philosophy and mathematics at Paris. Physician to Louis XIV; performed the first transfusion in man on June 15, 1667.

1620-1689.—Theophilus Bonetus. Swiss physician and a precursor of Morgagni in morbid anatomy. His principal works are entitled "Sepulchretum seu Anatomia Practica" and "Pharus Medicorum," published in 1668.

1621.—First Botanical Gardens established in Oxford, by Henry Danvers, Earl of Danby, to which Jacob Bobart the elder, 1596(?)-1680, a native of Brunswick, was appointed hortus prefectus.

1621-1675.—Thomas Willis, of Oxford. Physician to Charles II. Ascribed diseases, especially those of the blood, to "fermentation" and "effervescence." Advanced the knowledge of the anatomy of the nervous system and was the author of many works. His name is preserved in "The Circle of Willis," the original drawings of which were made by Sir Christopher Wren, and were published in 1664 in "Cerebri Anatome." He was also a good clinical physician and drew attention to the difference in sweetness of the urine in diabetes mellitus and insipidus.



1638.—Countess of Chinchon cured of malarial fever by Peruvian bark afterwards called cinchona.

fl. **1670.—John Greenfield, Jan Groeneveldt, of Deventer in Holland.** Lithotomist, who settled in London and wrote a treatise on the stone and gravel (London, 1677) and other works on lithotomy.

d. **1696.—William Cockburn.** Author of a work on gonorrhœa, in which he located the seat of the disease in the mucous glands of the urethra.

1623-1687.—**Sir William Petty.** Physician and political economist. Fellow of Brasenose College, Oxford: M.D., 1649. Professor of anatomy. Physician to the Army in Ireland and to the Viceroy. One of the Founders of the Royal Society. Invented an instrument for double writing and a ship to sail against wind and tide. He surveyed and afterwards mapped Ireland under the English Commonwealth Government.

1624-1677.—**Georg Hieronymus Welsch.** Physician of Augsburg, who re-discovered the guinea-worm. It was well known to the classical writers on medicine.

1624-1689.—**Thomas Sydenham.** Physician and epidemiologist. Studied at Oxford; took his M.D. degree at Cambridge 1676. Advocated Hippocratic doctrines and held that observations and experience were the standards for the physician. He recognized the healing power of Nature and recommended simplicity in treatment and thus became the great reformer of practical medicine in England and the founder of modern epidemiology. He wrote on epidemic constitutions and was the author of many works, the chief being "Observationes medicae," 1675, also treatises on gout, fevers and malaria.

1624-1674.—Jean Pecquet. French anatomist. Described the receptaculum chyli and thoracic duct and showed conclusively that the chyle does not go to the liver but by the lacteals to the receptaculum and thence to the subclavian vein.

1624-1669.—John Sterne, or Stearne. M.D., Trinity College, Dublin. Founder of the Irish College of Physicians.

1625-1680.—Richard Wiseman. Surgeon to the Stuart Kings from Charles I to James II. Skilful operator with an extensive military experience. Practised flap amputation. Author of "Several Surgical Treatises," 1672, and was the first English surgeon to draw wide generalisations from the particular cases which had come under his observation. He was the first to describe tuberculosis of the joints as "tumor albus."

1625-1695.—Giuseppe Francisco Borri, of Milan. He practised as an oculist at Milan, and was a worker in alchemy. Becoming embroiled in religious controversies he was eventually confined in the Castle of St. Angelo, Rome, where he still carried on his work and ended his life after an imprisonment of twenty-five years.

1626-1682.—Sir John Finch. Son of Sir Heneage Finch, Speaker of the House of Commons, and brother

of the first Earl of Nottingham. Educated at Oxford and Cambridge. M.D.Padua. Pro-rector of the University of Padua. Professor of anatomy at Pisa. Physician to Queen Catherine, and one of the founders of the Royal Society. Ambassador to the Ottoman Court. Left notes dealing with many scientific matters, and performed experiments on the digestion of animals. The inseparable friend of Sir Thomas Baines.

1626-1688.—**Domenico de Merchettis.** Professor of anatomy at Padua. One of the first anatomists to inject the vessels. Proved that arteries and veins communicated by fine ramifications.

1627-1691.—**Hon. Robert Boyle.** Son of the first Earl of Cork and when at Oxford took up the study of chemistry; he fitted up a laboratory at Oxford, where he carried on his researches. He first constructed the air-pump in 1660. He produced methyl alcohol from the products of the destructive distillation of wood and acetone from the acetates of lead and lime heated together. His name is immortalized by the law connecting volume and pressure in gases known as "Boyle's Law"; this he published in his work entitled "Two new experiments touching

the force of the spring of air compressed and dilated," 1662.

1628-1694.—Marcello Malpighi. Anatomist and histologist, Professor of Medicine at Bologna. Physician to Pope Innocent XII. Observed the capillary circulation in the lung of the frog in 1661. His name is enshrined in the "Malpighian corpuscles" of the kidney and the "Malpighian bodies" of the spleen. He was the author of several works on anatomy and pathology. He proved that the bile is secreted by the liver cells and not by the gall bladder.

1628-1711. — Nehemiah Grew. English naturalist. F.R.S. and Fellow of the Royal College of Physicians. Author of "The anatomy of vegetables," 1672, and "Idea of a philosophical history of plants," 1682.

1628.—Harvey published his work entitled "De Motu Cordis."

1629-1688.—Nathaniel Hodges. M.D.Oxon. Practised in London through the plague of 1665, of which he wrote an account in Latin under the title "Loimologia," which was translated into English by John Quincy. He died in a debtor's prison.

1629-1675.—Jean Henri Glaser. Professor of anatomy at Bâle. He published a philosophical treatise on the brain, in the third chapter of which he describes a "bitter excrement" that is formed in the cortex of the brain and passes to the ear by the auditory nerve; thence it goes to the parotid by the fissure which bears his name: the parotid, after imbibing it, spues it out into the meatus as ear wax. The description of the fissure is vague and admittedly based on the dissection of the calf. Barclay in 1819 is the first to call it by Glaser's name. The treatise also discusses such problems as why man is the only animal that laughs and whether the bilious dream only of blood and red things in general.

fl. **1630.—Thuillier** discovered that mal ardent, ignis sacer, or gangrenous ergotism, was due to eating grain contaminated with ergot.

1630-1702.—Olof Rudbeck. Swedish naturalist, educated at Upsala and Leyden. Professor of medicine and afterwards Rector of the University at Upsala in 1660 and founder of the first botanical garden there. Shares with others the discovery of the thoracic duct. Author, with his son, of a great work on botany, "Campi Elysii," 1701-2.

1631-1685.—William Boghurst. Citizen and apothecary of London. He wrote "Loimographia," the

best account of the great plague of London in 1665. It is written in English and was published by the Epidemiological Society in 1894.

1631-1717.—Pierre Brisseau, of Tournay. Professor at Douay. The first to demonstrate by dissection the clouded lens in cataract in 1705.

1631-1658.—George Joyliffe. M.D.Cantab. Practised in London. Shares with Pecquet and Rudbeck the honour of the first description of the lymphatic system, which he described to Glisson in 1652.

1631-1691.—Richard Lower. A Cornishman. M.D.Oxon. Anatomist, physician, and a Fellow of the Royal Society. Practised in London; assisted Willis as his prosector in Oxford. Experimented in physics and physiology, making fundamental original experiments. First to perform direct blood transfusion at Oxford. His name is commemorated by the "tubercle of Lower" in the heart. Author of "Tractatus de corde," 1669, and "Dissertatio de origine catarrhi," 1672.

1632-1704.—John Locke. M.B.Oxon. Better known as a philosopher though he practised for some years as a physician. He was a friend of Sydenham and physician to Lord Ashley, the first Earl of Shaftesbury. His "Observationes

Medicae" were published at Amsterdam in 1699.

1632-1678.—Nicolaus Holboken. Obstetrician and professor in Utrecht and Harderwyk. Delineated and described with accuracy the placenta and envelopes of the ovum.

1632-1723.—Anton van Leeuwenhoeck. Naturalist and microscopist. Janitor of the Aldermen at Delft. The first to describe the blood corpuscles and to publish an account of the capillary circulation and so complete Harvey's theory of the circulation. He also described the spermatozoa and discovered the striped character of voluntary muscle and the structure of the crystalline lens. He was the first to see protozoa under the microscope (1675), and to find micro-organisms in the teeth.

1632-1723.—Sir Christopher Wren. Architect and anatomist. Studied medicine at Oxford and was the first to demonstrate the injection of blood and drugs into the veins. He acted as prosector to Thomas Willis, and designed the present St. Paul's Cathedral. President of the Royal Society in 1680.

1633-1714.—Bernardino Ramazzini. Professor at Padua University and author of "De Morbis Artificum

Diatriba," 1701, in which he describes the so-called "trade-diseases."

1633-1684.—William Croone. Physician and founder of the Croonian lectures. One upon "the nature and laws of muscular motion," to be read annually before the College of Physicians with a sermon at St. Mary-le-bow; the other to be delivered yearly before the Royal Society, of which he had been secretary. He made some original observations in his "De ovo" anticipating Malpighi's work on the same subject. Professor of Rhetoric at Gresham College and an early promoter of the Royal Society.

1634-1707.—Denis Dodart, of Paris. Lawyer, botanist and consulting physician to Louis XIV. Author of "Questio medica," 1682, and "Enquiries into the cause of the human voice and its different tones."

1635-1716.—William Cole. M.D. of Oxford. Practised at Worcester: a friend of Sydenham and a leader of the iatro-chemical school. Wrote "Novæ hypotheseos ad explicanda febrium intermittentium," London, 1694.

1637-1686.—Jan Swammerdam, of Amsterdam and Hamburg. Discovered the valves in the lymphatic vessels and proved their true nature. He was best known for his discoveries in connection with insects. He observed the red corpuscles of the frog's blood in 1658 and saw the circulation in the capillaries though he

does not appear to have recognized its significance.

1637-1698.—Richard Morton. M.D.Oxford. Physician, epidemiologist and chaplain at New College, Oxford. He afterwards practised in London. He attributed all diseases to poisoning of the "vital spirits" and was a firm believer in drugs. Gave a clear description of scarlet fever. His works "Pyretologia," 1692, and "Phthisiologia," 1689, passed through several editions.

1637-1709.—François Mauriceau. Obstetrician and President of the College of St. Côme. He introduced version and much practical knowledge into his teaching of obstetrics. Author of "Traité des maladies des femmes grosses," Paris, 1668, which ran through many editions and was often translated.

1638-1686.—Nicolaus Steno, or Niels Stensen. Court physician to Ferdinand II and Cosmos III at Florence. Professor at Copenhagen. Proved that the heart was a muscle and that consequently it contracted actively and expelled the blood. Described the histology of muscle and discovered Stensen's duct. Entered the priesthood, became Bishop of Titiopolis in 1677. As Apostolic vicar of Hanover he endeavoured to convert Northern Europe to Catholicism, while holding the chair of anatomy at Copenhagen.

1638-1700.—Heinrich Meibom. Professor of medicine and afterwards of history at Helmstädt. He described the follicles of the eyelids in 1666.

1638-1731.—Fridrik Ruysch. Surgeon and anatomist.

Professor of anatomy at Amsterdam. Author of "Observationum anatomico — chirurgicarum centuria," 1691. A master in the art of the minute injection of anatomical structures. "The Tunica Ruyschiana" of the eye commemorates his name. Peter the Great, who had been his pupil, bought his museum of anatomical specimens, but when they arrived at St. Petersburg it was found that the sailors had drunk the spirit in which they were preserved. With characteristic energy Ruysch at once set out to make a new museum. He gave the first description of bronchial blood vessels and vascular plexuses of the heart.

1640-1693.—Thomas Theodore Kerckring. Physician at Amsterdam and fellow-worker with Ruysch. Author of "Speciligium anatomicum," 1670, and "Anthropogeniæ iconographia," 1670. The large ossicle sometimes present at the lambdoidal suture was first described by him, and his name is remembered in the valvulæ conniventes of the small intestine.

1640.—Cinchona bark introduced into Europe by **Juan del Vego,** physician to the Count of Cinchon, and called "Cinchona," or "Countess's bark," in honour of the Count's wife. Sydenham introduced it into England.

1640-1700.—Gideon Harvey. Born in Holland and educated abroad. Physician to King Charles II and afterwards to William III. Author of the "Family Physician" and several popular works on medicine.

1641-1687.—Cornelius van Solingen, of The Hague. Surgeon who advanced the study of obstetrics, ophthalmology and otology and originated many improvements in surgical instruments.

1641-1673.—Regner de Graaf. M.D. Physician of Delft.

A pupil of Diemenbroeck and of De la Boë (Sylvius), demonstrated ovulation anatomically, pathologically and by experiment. He described "the tubular structure of the testis." He also studied the functions of the pancreas and made an artificial biliary fistula. His name is preserved in "The Graafian follicle." In 1664 he experimented on the secretion of glands by tying a tube in the duct of Wirsung to collect the secretion of the pancreas.

1641-1704.—William Briggs, of Norwich. Superintendent of St. Thomas's Hospital in the time of Charles II and physician in ordinary to William III. Author of "Ophthalmographia," 1676.

1641-1715.—Raymond Vieussens. Professor of anatomy at Montpellier. Pagel described him as the "Founder of the pathology of diseases of the heart." He is said to have dissected over five hundred bodies. The inferior medullary velum is known as the "Valve of Vieussens."

1642-1700 (?).—John Browne. Surgeon in ordinary to Charles II and St. Thomas's Hospital. Author of "A complete treatise of the muscles as they appear in the human body," London, 1681, illustrated with copper-plate engravings said to be the first in which the names were actually printed on the muscles. He also wrote on the King's Evil and the healing by Royal Touch, which has an appendix containing the numbers of persons "touched" from 1660-1682.

1643-1703.—Laurence Bellini. Professor of Philosophy at Pisa, until the Grand Duke Ferdinand created a chair of anatomy for him. Practised in Florence, 1693, and became physician to Cosmo III. An important feature in his teaching is the theory of counter-irritation. The tubes in the kidney which bear his name were first seen by him in a deer sent to his master Borelli for dissection. Published ana-

tomical works on the renal system and other medical subjects.

1643-1679.—John Mayow. M.D.Oxon. A Cornishman. Physiologist and chemist. A friend of Lower and pupil of Willis. Studied the process of respiration and observed "that the particles of the air absorbed during respiration are designed to convert the black or venous blood into the red or arterial." An enthusiastic worker in chemistry. In 1668 he claimed that air was a mixture of two kinds of gases: the one, "spiritus nitro-aëreus," was necessary both for combustion and respiration, and the other, "spiritus igneo-aëreus," incapable of combustion and respiration. Although he did not separate the gas he called "spiritus nitro-aëreus" he thus practically discovered oxygen. He died, all too young, of phthisis, but his "Tractatus quinque" which was published in 1647 remains a classic. It deals with the source of the body heat, which he showed to be situated in the muscles, a fact which was not generally accepted until it was substantiated by Helmholtz two hundred years later.

1643-1724.—Thomas Guy. Founder of Guy's Hospital. He also built additions to St. Thomas's Hospital.

1645-1772.—Jean Méry. Chief Surgeon to the Hôtel Dieu, Paris. In June, 1684, he wrote a communication to a Parisian scientific journal describing the bulbo-urethral glands; fifteen

years later Cowper announced the discovery of these glands in London. Méry also published in 1700 a work entitled: "New system of the circulation of the blood."

1646-1721.—James Young. Surgeon. Author of a treatise on wounds of the brain and other works on surgery and anatomy. He wrote "Medicaster medicatus" and "Currus triumphalis ex terebinthina," London, 1679.

1647-1722.—Thomas Gibson. M.D. Leyden. Physician-General to the English Army. His second wife was the daughter of Richard Cromwell. Published "The anatomy of human bodies epitomized" in 1682.

1647-1732.—Walter Harris. Physician. Educated at Oxford but took his degree at Bourges in France. He was physician to King William III in 1688. Author of work, "De Morbis Acutis Infantum," 1689, one of the earliest books devoted especially to the diseases of children. It was translated into English, French and German.

1648-1721.—Matthias Gottfried Purmann, of Lüben in Silesia. Military surgeon and oculist. He treated intestinal wounds with simple suture and was acquainted with bi-manual examination for stone. He performed the first transfusion in Germany with the blood of a lamb.

1648-1730.—Joseph Guichard Duverney. Professor of anatomy at Paris. First to describe the diseases of the ear in accordance with their anatomical position. Cleared up the confusion of the nomenclature of the brachial plexus.

1649-1713. Gottfried Bidloo. Professor of anatomy and surgery at The Hague and Leyden. Physician to William III of England. Author of "Anatomia humani corporis," Amsterdam, 1685, which is illustrated with one hundred and seven fine plates by Gerard de Lairesse.

1649-1730.—Johann Palfyn. Gynæcologist and inventor of a type of midwifery forceps which he exhibited in Paris in 1721. Author of a work on monsters.

1649-1734.—Sir John Floyer. Physician practising at Lichfield. Noted the relation of the frequency of the pulse to that of respiration, and introduced the minute watch to determine the pulse rate. Author of "An inquiry into the right use of the hot, cold and temperate baths in England," 1697, advocating treatment with cold water and bathing. It ran through six editions and was translated into Latin.

1650-1692.—Anton Nuck. Professor of anatomy and surgery at Leyden. Famous as an oculist, aurist and dentist. Published "Adenographia," 1692, "Sialographia," 1690, and "Operationes

et experimenta Chirurgica," 1692. His name remains in anatomy in connection with the canal of Nuck.

1650-1708.—Edward Tyson. M.D.Cantab. Anatomy reader at the Surgeons' Hall. Professor of physic at Gresham College and physician to Bridewell and Bethlehem Hospitals. Wrote in 1699 "A Philological Essay concerning the Pygmies of the Ancients" and several works on comparative anatomy, describing dissections of the opossum and porpoise, the rattlesnake and the orang-outang.

ca. **1679.—R. Lowdham, of Oxford.** Surgeon. Said to have been the first to practise the flap method in amputation.

1650-1711.—Charles Bernard. Serjeant-Surgeon to Queen Anne and a friend of Swift. He noticed that after an operation for cancer the growth often re-appeared and was the first English surgeon to place the fact on record. He collected a very fine library.

ca. **1695.—John Colbatch.** Apothecary, physician and surgeon. Author of "A new light on chirurgerie," 1695, in which he recommends a vulnerary powder and hot water in the treatment of wounds and hæmorrhage.

1650-1729.—John Radcliffe. Physician. His fortune endowed the Radcliffe Camera, the Radcliffe Infirmary and the travelling medical fellowships

at Oxford. Succeeded to the practice of Richard Lower at a time when success was largely a matter of politics. The first possessor of the "gold-headed cane." His successor was the "Princely Mead."

1651-1724.—Hendrik van Deventer. M.D.Grönigen. Began as apprentice to a goldsmith but afterwards studied obstetrics in which he greatly advanced existing knowledge, especially in connection with contracted pelvis. His obstetrical work "Operationes chirurgicæ," 1724, was translated into Dutch, French, German and English. He also interested himself in orthopædics. He practised at The Hague.

1652-1712.—Johann Conrad Peyer, of Schaffhausen. Morbid anatomist. Professor of rhetoric, logic, and medicine in the University of Bâle. He described the glands of the intestines, gave his name to "Peyer's patches" and wrote on the subject of digestion in Ruminants.

1652-1723. Augustus Quirinus Rivinus. Botanist and anatomist. Professor of physiology and anatomy at Leipsic. He wrote "A general introduction to botany," 1690, and medical works in 1678 and 1717 describing the ducts of the sublingual gland and the notch in the tympanum which bear his name.

d. **1774.—Georg Arnaud de Ronsil.** Surgeon. Studied in Paris, practised in London. Wrote on

hernia, aneurysm, diseases of the ureters and bladder, as well as two volumes on the history of medicine and surgery in France and England.

1653-1727.—**Johann Conrad Brunner, of Regensburg.** Professor of medicine in Heidelberg. Discoverer of the duodenal glands bearing his name. Court physician at Düsseldorf. Author of "Experimenta nova circa pancreas," 1682.

1653-1729.—**Sir Richard Blackmore.** Physician and poet, educated at Westminster and Oxford, practised in London. Physician to King William III. Wrote "Prince Arthur," "The Satyr against Wit," and "Eliza," with the avowed object of improving the moral tone of literature debased by Congreve, Dryden and others. He also wrote several medical treatises.

1654-1720.—**John Maria Lancisi.** Professor at the Collegio da Sapiencia at Rome, 1684-97. Physician and chamberlain to Popes Innocent XI and XII and Clement XI. Published in 1684 "De sede animae cognitantis" in which he described the corpus callosum. He published in 1704 the thirty-eight plates prepared by Eustachius in 1552, which were rescued by Clement XI from the family of the artist. He wrote on aneurysm and heart disease as causes of sudden death. The "nerves of Lancisi" commemorate him.

1655-1734.—**Bernardine Genga.** Professor of anatomy and surgery in Rome and surgeon to the Santo Spirito Hospital. A strenuous supporter of Harvey's doctrine, which he greatly advanced in Italy. He had the courage to charge Hippocrates with grave errors in surgical treatment.

1656(?)-1724(?).—**Abraham Cyprianus.** Practised first in Amsterdam as a lithotomist; became Professor of medicine and surgeon in Franeker, 1693. Operated successfully on a case of tubal pregnancy in 1694. Settled in practice in London. Within twelve years he performed 1,400 lithotomies.

1658-1741.—**Francisco Torti, of Modena.** Physician and pharmacologist. Introduced cinchona into Italy and mentions it in his book on pernicious fevers published in 1712.

ca. 1658-1718.—**Pierre Dionis.** Surgeon-in-ordinary to the Queen of France and the Empress Maria Theresa. Author of several treatises on surgery and anatomy and the first to emphasize the effect of rickets on the pelvis. The first to demonstrate anatomical dissections and surgical operations at the Jardin du Roi.

1660-1702.—**Clopton Havers.** M.D. of Utrecht. Practised in London, and studied anatomy. Was the first "Gale reader" at the Barber Surgeons' Company. Published his "Osteologia," in which he described in 1691 the canals which

bear his name. He also wrote "A Survey of the Microcosm" in 1695.

1660-1734.—Georg Ernst Stahl. Physician and professor of pathology and dietetics at Halle. Founder of a system of medicine in which the "soul" (anima) played the leading part as the life-giving principle which imparts life to dead matter. He gave a clear account of lachrymal fistula and foreshadowed psychotherapy.

1660-1742.—Friedrich Hoffman. Epidemiologist and iatro-mechanical physician. Professor of anatomy and surgery at Halle. He was one of the first to describe rubella, gave an original description of chlorosis and left an account of a typhus epidemic. He revived the use of mineral baths and had a clear perception that pathology is an aspect of physiology.

1660-1753.—Sir Hans Sloane. Physician, antiquary and collector. President of the Royal Society, 1727. His collection of antiquities and manuscripts formed the nucleus of the British Museum.

1661-1708.—François Poupart. French naturalist and anatomist. He studied medicine because he thought it necessary for the completion of his knowledge of natural history. He lived and died in dire poverty, but was a brilliant scientist. The "hernia" surgeons of the 18th century are responsible for associating the

aponeurosis with his name; Falloppius an Vesalius had described it a century earlier.

1661-1719.—Sir Samuel Garth. Physician and author of the famous poem "The Dispensary," 1699, which gives a satirical account of the dispute between the physicians and the apothecaries over their charges.

1664-1726.—Antonio Pacchioni. Italian anatomist. Published various works on the anatomy of the brain and its membranes, maintaining with much ingenuity a theory that the dura mater acted as a muscular force by alternative contraction on the cerebrum and cerebellum. He described the "Pacchionian" bodies.

1664-1742.—Thomas Dover. B.A. Oxford, 1684, M.B. Cambridge, 1687, a resident pupil of Thomas Sydenham; practised in Bristol in 1708; sailed as second captain and was captain of Marines in the "Duke" belonging to the Merchant Adventurers of Bristol. He brought back Alexander Selkirk, the original of Robinson Crusoe. Dr. Dover practised for some time at Bristol. He used crude mercury and was the originator of Dover's Powder (pulv. ipecac. et opii).

1665.—The Great Plague of London.

ca. **1665-70.—Midwifery forceps** invented by **Peter Chamberlen.** William Giffard was the earliest to describe and *depict* midwifery forceps, about 1734 (see page 165).

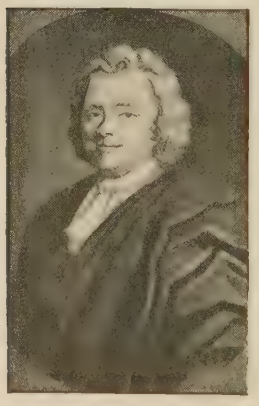
1666-1709.—William Cowper. Surgeon and anatomist, F.R.S. Published in 1694 "Myotomia reformata," and "The Anatomy of Humane Bodies" in 1698. He was fiercely accused by Bidloo of plagiarising his plates in the latter work. In the course of the ensuing controversy he described the glands which bear his name, 1702. He was the first to publish a representation of the thoracic duct in man. He had a large surgical practice in London.

1666-1723.—Antonio Maria Valsalva, of Imola. Anatomist and pupil of Malpighi. He was professor of anatomy at Bologna, and specialized in otology. His method of inflating the middle ear is still practised. Author of "De Aure humana," 1705.

1668-1707.—Giorgio Baglivi. Iatro-mathematical physician and professor of medicine and anatomy in Rome. Called "The Italian Sydenham." Spent much time at experimental physiology which he valued highly; he gave a clear description of typhoid which he called "The Mesenteric Fever of Rome." Published several works on medicine. He endeavoured to divide diseases into those of the blood and vital spirits. The Iatro-mathematical school taught that

physiological processes were explicable by the laws of physics. The Iatro-chemical school regarded all vital phenomena as essentially chemical. Chemistry was practically non-existent at the time, and the main laws of physics were only dimly discerned.

1668-1738.—Hermann Boerhaave, of Leyden. Physician. Lecturer on medicine and botany, and professor of chemistry at Leyden. A man of great talent who did much to further the advance of science in the 18th century. He claimed Hippocrates and Sydenham as his models, and was the first to establish the clinical method of instruction. His well-known aphorisms influenced medical practice throughout the 18th century. He was the first to make a chemical examination of the urine. He had the largest medical practice in Europe, and was remarkable alike for his knowledge and for the affection he inspired in his pupils and patients.



1669-1760.—Jacques-Benigne Winslow. Danish professor of physic, anatomy and surgery at the Jardin du Roi, Paris. He was the author of anatomical and pathological works. The ligament and foramen commemorate him.

1671-1743.—George Cheyne. Physician. Declared the

lowering of the elasticity of the "fibres" to be a general cause of disease, but deduced ordinary fever from a stoppage of the glands, and lingering fever from atony of those organs. He wrote works on scurvy and longevity.

1673-1754.—Richard Mead. Physician and epidemiologist.

Author of many works on medicine and of the first quarantine regulations adopted in England. He succeeded Dr. Radcliffe in practice in London, and was thesecond owner of the "gold-headed cane." He was known as "Princely Mead." He was called to attend Queen Anne in her final illness and became the most prosperous physician of his time.

1673-1719.—James Keill, of Northampton. Physician who spent eight years in confirming the experiments of Sanctorius. He computed the velocity of the blood in the aorta at 73 feet per minute and the force of the heart at nearly eight ounces.

-1734.—Robert Houston. M.D. Practised in Glasgow where he successfully emptied an ovarian cyst after incision in 1701. Afterwards he resided in London and practised in Westminster, where in 1717 he operated on a case of extra-uterine pregnancy.

1674-1750.—Jean Louis Petit. French surgeon and anatomist of distinction. First director of the Académie de Chirurgie of Paris. Foreign member of the Royal Society of London. Wrote on surgical subjects. Several anatomical structures bear his name.

1675- .—William Cole, of Bristol. He considered the tension of the nervous system, due to a deposit of abnormal material upon the nerve roots, to be the usual cause of fever and especially of the symptoms of irritation occurring in fever. He also taught the constant expansion of the arterial system towards the capillaries.

1675-1721.—Martin Naboth. Professor of Medicine at Leipzic. Described the "ovules" which bear his name in 1704, and published a work on sterility in women in 1717.

1675-1728.—John Freind. M.D.Oxon. Classical scholar, Jacobite physician and the first English historian of Medicine. Edited a Greek and Latin edition of Æschines and Demosthenes and a reprint of the Delphin edition of Ovid's Metamorphoses. His "History of Physic from the time of Galen to the beginning of the Sixteenth Century," written while imprisoned in the Tower, was published in two volumes in 1725 and 1726.

1675-1742.—**James Douglas.** M.D. Rheims. F.R.S. Physician to Queen Caroline. Practised in Red Lion Square, and gave public dissections in his house. Published in 1707 a work on Myology, and in 1730, a description of the peritoneum, in which he gave a description of the fold and pouch which bear his name.

1678-1747.—**François de Lapeyronie.** Taught anatomy and surgery at Montpellier, and at the College of St. Côme in Paris. Chief surgeon of the Charité. One of the founders of the French Académie Royale de Chirurgie.

1680-1763.—**William Smellie, of London.** Obstetrician. Inventor of numerous instruments, including midwifery forceps with a simple lock, which became known as the English lock, also perforators and blunt hooks. His first forceps were made of wood, and afterwards he used metal blades covered with leather. Author of "Treatise on the Theory and Practice of Midwifery," London, 1752. He considerably advanced the knowledge of the position of the head during labour, and also of the contracted pelvis.

1681.—**Royal College of Physicians of Edinburgh** founded.

1681-1737.—**Giovanni Domenico Santorini.** Anatomist, born at Venice, a pupil of Malpighi. His name is preserved in the cartilages of Santorini.

1682-1772.—Giovanni Battista Morgagni, of Forli. The founder of pathological anatomy and professor at Padua. He was the first to devote exclusive attention to the anatomical results of common diseases. Author of "Adversaria anatomica," 1706, and "De sedibus et causis morborum per anatomen indagatis libri quinque," Venice, 1761, which he published in his 79th year. In this work he draws attention to syphilitic aneurysm and disease of the mitral valve. He identified the clinical features of pneumonia with solidification of the lungs, and described what is now known as the "Morgagnian cataract."

1683-1758.—Lorenz Heister, of Frankfort-on-Main. Was a military surgeon in the Dutch army. Author of well-illustrated works on surgery and anatomy, which were popular in his time, and were translated into English. He became professor of anatomy and surgery in Altdorf.

1684-1751.—Abraham Vater. Professor of botany, anatomy, pathology and therapeutics at Wittenberg. He describes the papilla named after him, as a bile duct joined to the pancreatic duct, in a work published in 1710. In his

"Dissertatio de concensu partium," 1741, he described the Pacinian corpuscles.

1684-1766.—Jean Astruc. French surgeon and obstetrician. He wrote the history of syphilis and venereal diseases in 1736 which remains a most useful record. It went through several editions and was translated into English. Author also of "Traite des maladies des femmes," Paris, 1761. He became professor of anatomy at Toulouse in 1710 and of medicine at Montpellier in 1716. About 1728 he removed to Paris and was appointed consulting physician to the King and professor of medicine in 1730.

1686-1732.—Adrian Christian Thebesius. Practised medicine at Hirschberg in Silesia. He wrote a work on the circulation of the blood in the heart in 1708, describing the vessels (venae minimae Thebesii) and the valve of the coronary sinus.

1686-1736.—Gabriel Daniel Fahrenheit. German natural philosopher who resided in Amsterdam. He is said to have been the first to use mercury in a thermometer. He fixed the zero point of his instrument at the lowest degree to which the mercury sank in the winter of 1709.

1688-1752.—**William Cheselden.** Surgeon, anatomist, lithotomist and oculist. Surgeon to Queen Caroline, and to St. Thomas' and Chelsea Hospitals. Author of "Osteology, or the Anatomy of the Bones," 1733, "Anatomy of the Human Body," 1714. Introduced the formation of an artificial pupil by a simple incision of the iris made with a needle introduced through the sclera. He was a very rapid operator, especially in lithotomy. He often performed the suprapubic operation.

-1759.—**John Douglas.** Surgeon to Westminster Hospital. He re-introduced the operation of suprapubic lithotomy.

1693-1762.—**Jacques Daviel.** Practised first at Marseilles and from 1746 at Paris. He originated the operation of extraction for cataract in place of "couching."

1694-1768.—**John Huxham.** Epidemiologist; a pupil of Boerhaave. Drew attention to diphtheritic paralysis in 1757 and to the colic following cider drinking in Devonshire, due to lead used in the presses. The association of cider drinking and lead colic was not made until 1767, when Sir George Baker described them as cause and effect.

1697-1767 — **Alexander Monro, Senior.** Professor of anatomy and surgery at the University of Edinburgh. A pupil of Boerhaave and a remarkable teacher. His son and grandson succeeded him in the professorship, which remained in the family from 1720 to 1846. Author of "Osteology, or a Treatise on the Anatomy of the Bones," 1726, and "An Essay on Comparative Anatomy," 1744. The French translation of the Osteology is unusually well illustrated with fine copperplates, prepared under the personal supervision of Mlle. Geneviève d'Arconville.

1697-1770. — **Bernhard Siegfried Albinus.** Born at Frankfort-on-Oder. Professor of Anatomy in Leyden for fifty years. A pioneer in modern human anatomy. He published a series of illustrated anatomical works (1726-1762) in which the drawings are made to scale by J. Wandelaer, an artist whom he trained specially for the purpose. They probably represent the zenith of anatomical pictures.

ca. 1740.— **Jacques Mesnard, of Rouen.** Surgeon of Rouen and advocate of the forceps in midwifery. He described the forceps he invented in 1741. Author of "Le guide des accouchements," 1743. He also devised and used a double crotchet.

1700-1772.—**Gerhard van Swieten, of Leyden.** Settled in Vienna, entered the Church, and became

physician and president of the General Medical Department of Austria. Founder of the old Vienna School of Medicine. He used the Fahrenheit thermometer and advocated the use of corrosive sublimate in the treatment of syphilis. His name is preserved in the Liquor van Swieten, an alcoholic solution of corrosive sublimate, which is still in use. He was a skilful stenographer, and acted as censor of books to the Court.

1700-1778.—**Samuel Sharp.** Born in Jamaica. A pupil of Cheselden and surgeon to Guy's Hospital, 1733-1757. Wrote a "Treatise on the Operations of Surgery" which passed through many editions and was translated into French and Spanish. Also a "Critical Enquiry into the Present State of Surgery," which was translated into French, Spanish, German and Italian. He was the first surgeon to practise the corneal incision in the cataract operation and he invented a knife for the purpose.

1703-1776.—**Robert James.** Physician. Practised in Sheffield, Lichfield, Birmingham, and finally in London. Author of several medical works, and originator of the famous James' Fever Powder, a preparation of antimony, which became very popular and is still used. He was a friend of Dr. Samuel Johnson, the lexicographer.

1703-1780.—André Levret, of Paris. Obstetrician. Improved the operation of version. Invented a type of midwifery forceps and introduced the pelvic curve in the blades. Author of "Traité sur l'art des accouchements," Paris, 1753.

1704-1776.—Anton de Haen, of The Hague. A pupil of Boerhaave; a colleague of Van Swieten, and associated with him in the foundation of the old Vienna School. Advocate of simplicity in treatment. He used a clinical thermometer, wrote a treatise on medicine in fifteen volumes, and was a firm believer in witchcraft.

1705-1780.—Hieronymus David Gaub, of Heidelberg. A pupil of Boerhaave. Professor of chemistry at Leyden, and author of the first complete work on pathology, viz., "Institutiones pathologiae medicinalis," Leyden, 1750, which long remained a textbook throughout Europe, and was translated into Dutch, German and French.

d. 1784.—Thomas Goulard. Surgeon. Royal Demonstrator of Surgery and Anatomy at Montpellier, where he was also Surgeon-Major in charge of the Military Hospital. Advocated and introduced the use of solutions of lead salts into surgery. He wrote on venereal disease and was the originator of the formula for Goulard water in 1760.

1706-1790.—Benjamin Franklin. Physician, of Boston. Invented the bifocal lens and a flexible catheter.

He treated nervous diseases by electricity, and was the chief founder of the Pennsylvania Hospital. He wrote on many subjects, including "Dialogue with the gout," Inoculation in small-pox, Infant mortality, Sleep, Deafness and Medical education.

1707-1779.—**Nathan Alcock**. M.D. Lecturer on anatomy and chemistry at Oxford, pupil of Boerhaave. He practised in Runcorn, Cheshire, his native town. He is commemorated by the canal in which the internal pudic vessels and nerves run across the perineum.

1707-1788.—**Louis Le Clerc, Comte de Buffon**. Superintendent of the Jardin du Roi. The first to express clearly the idea that unity of plan in the animal kingdom is to be explained by community of origin. It is doubtful whether he genuinely believed in evolution as we understand it, or whether he only held the doctrine tentatively.

1708-1777.—**Albert von Haller**. Botanist, physiologist, anatomist, medical bibliographer and poet. Born at Berne. He was a pupil of Boerhaave. At the University of Göttingen he taught medicine for 17 years, having already made his reputation as a botanist. Was professor of anatomy and director of the hospital at Berne, 1753. Propounded the doctrine of irritability, and added greatly to the knowledge of the heart. May be regarded as one of the most

acute medical intellects in the eighteenth century.

1708-1779.—Thomas Cadwalader. Physician of Philadelphia. Founder of the Philadelphia Library, a pioneer of inoculation and the first to teach anatomy in that city by dissections. Author of "Essay on the West India Dry-Gripes" (1745): described lead colic and lead palsy resulting from rum distilled through lead pipes.

1710-1786. — Jacques Gautier d'Agoty. Physician, anatomist and artist. Pupil of le Blonde. He claimed to be the inventor of the four-colour process of printing. He published a number of works and atlases with coloured plates on myology and anatomy.

1710-1790.—William Cullen, of Lanarkshire. Physician.

A great clinical teacher. Professor of medicine at Glasgow and Edinburgh. Founder of a system of medicine in which he believed the chief agent to be the nerves, and that the brain was indissolubly united with the soul. He divided all internal diseases into four classes: (1) Pyrexiae; (2) Neuroses, or nervous diseases; (3) Cachexiae, or diseases arising from a bad habit of the body; (4

Locales, or local diseases. His therapeutics were simple, and he deplored excessive venesection. He introduced clinical teaching. His book, "First Lines of the Practice of Physic," published in 1776, had a very wide reputation.

1710-1801.—William Heberden, of London. F.R.S. Clinical physician. First to describe varicella and angina pectoris. The connecting link between Sydenham and Bright. His name lives in "Heberden's nodes." His "Commentaries," written in Latin, were published after his death. He practised in London from 1748, and acquired a high reputation. In 1745 he attacked the use of theriaca and other polypharmic compounds in his "Antitheriaka," and demonstrated their futility as serious remedies.

1711-1746.—Johann Nathaniel Lieberkühn. German anatomist. Practised in Berlin. Fellow of the Royal Society of London. A very skilful injector. Described his crypts in a "Dissertation on the structure of the intestine," 1744.

1711-1778. — Laura Maria Catarina Bassi - Varati.

Graduated at Bologna in 1731; one of the most celebrated of the many women who took the double doctorate in philosophy and medicine at this University. Subsequently lectured on philosophy in the University, and practised medicine in the town. Was chiefly an experimental physicist, and became professor of this subject in 1776. For many years she delivered the Annual Discourse on the occasion of the public dissection.

1712-1780.—John Fothergill, of London. Quaker physician. He wrote an excellent clinical monograph "On malignant sore throat" which was either scarlet fever or diphtheria. It had a large circulation and was translated into several languages.

1712-1781.—Exupère Joseph Bertin. Anatomist to the Academy in Paris. Physician to the Hospodar of Wallachia and Moldavia. Made discoveries in comparative anatomy, particularly with reference to the musculature of the equine stomach, and the lachrymal apparatus.

1712-1789.—Angélique Marguerite Leboursier du Coudray. Midwife of Paris. Inventor of the obstetrical "phantôme," with which she went about the country lecturing to the ignorant local midwives. Author, 1759, of "Abrégé de l'art des accouchements avec plusieurs observations sur des cas singuliers," which passed through six editions. She founded many maternity hospitals in the large cities of France, and in 1766 she gave a course of lectures to the doctors of the Naval School of Rochefort.

1713-1788.—Percivall Pott. Surgeon to St. Bartholomew's Hospital 1749-87, and a great teacher of surgery. Author of "Chirurgical Works," 1771. Authority on spinal diseases, hernia, fistula and injuries to the skull, &c. The terms "Pott's fracture," "Pott's disease of the spine" and "Pott's puffy swelling" are still in use and perpetuate his name.

fl. **1714.—Emanuel Timoni.** A physician of Constantinople, who studied medicine at Padua and Oxford, and gave the first account of inoculation for smallpox before the Royal Society in London in 1713.

1716-1774.—**Anna Morandi-Manzolini.** Wife of Jean Manzolini, the painter, who was engaged with his master, Hercule Lelli, on a number of anatomical wax models for the "Camera" of Pope Benedict XIV. The two artists quarrelled, and Anna took up the work in order to prevent the loss of the contract, and soon excelled her husband in skill. She was subsequently given a chair of anatomy at Bologna in order that she might lecture in the University. Her famous models were acquired soon after her death, for the city.

1717-1783.—**Charles Linnaeus (von Linne).** Botanist. The father of systematic botany. Professor of physic and botany at Upsala. Physician to the King of Sweden. Founder of the Stockholm Academy. Created the order Primates and was the first to include man in a zoological order.

-1781.—**George Armstrong.** Pioneer and first in Europe to open a hospital for children in 1769.

-1765.—**John Laurance Gasser.** Professor of anatomy at Vienna 1757-1765. Said to have been a great dissector, but practically nothing is known of him except that his pupil Raymund Balthasar Hirsch, in his only published paper, named the ganglion which he had discovered the "Gasserian ganglion" in order that his beloved master might not be forgotten.

1718-1783.—William Hunter. Born at Long Calderwood, Scotland. Obstetrician and anatomist. Settled in London, 1741. Lectured on anatomy and surgery in Great Windmill Street, London. Appointed physician to the Queen, 1764. Author of "Anatomia Humani Uteri Gravidi," 1774. It is illustrated with life-size copperplates anatomically exact and artistically perfect. In some ways an even greater man than John Hunter, his younger brother. He had wider interests, but less originality. His great collection of normal and pathological anatomy, manuscripts and books, now forms the Hunterian Museum of the University of Glasgow.

1719.—Westminster Hospital, London, established.

1720-1793.—Charles Bonnet. French naturalist and entomologist. Gives in his "Contemplation de la nature," 1764, the most complete expression of the idea of a "scale of beings" which he extends to the whole universe.

1721-1770.—Mark Akenside. M.D., F.R.S. Studied at Edinburgh and Leyden. Practised at Northampton and in London. Goulstonian lecturer at the Royal College of Physicians, 1755, on the function of the lymphatic system; physician to St. Thomas' Hospital. Author of various

medical papers. Harveian orator, 1760, and Croonian lecturer, 1770, R.C.P. He wrote many poems, the best known being "The Pleasures of Imagination," first published in 1744.

1722-1776.—**Theophile de Bordeu.** Physician and anatomist of Montpellier. Maintained that every disease was decided by a crisis, and his therapeutics were aimed at the production of the crises, which in chronic diseases he accelerated by the use of stimulants. He was one of the originators of the doctrine of vital force. He had some premonition of the internal secretion of glands.

1722 1789.—**Peter Camper.** Anthropologist. Professor of anatomy at Amsterdam and of medicine at Genoa. He first proposed symphysiotomy, and introduced the "facial angle" as a criterion of race. He is remembered by the "fascia of Camper."

1723-1795.—**Christopher Gottlob Kratzenstein, of Wernigerode.** Professor in Copenhagen. The first to employ electricity as curative treatment in cases of weakness and paralysis.

1724-1816.—**Jacques René Tenon.** French army surgeon. Professor of pathology at Paris. Author of many medical works; that on the anatomy, pathology and surgery of the eye was published in 1806. In this he described "Tenon's capsule."

1725.—**Guy's Hospital, London**, established.

1725-1761.—**Pierre Tarin.** French physician and anatomist. Published various works on anatomy, and a translation of "Haller's Physiology." He is remembered by the "valves of Tarin," part of the ependymal roof of the fourth ventricle.

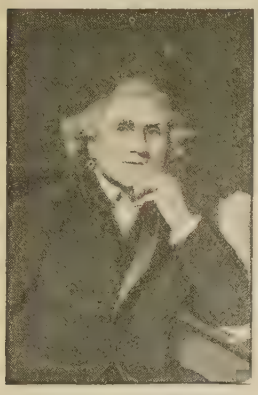
1725-1813.—**Leopold Marco Antonio Caldani.** Professor of anatomy at Bologna, Venice and Padua. He published an important work, "Icones anatomicae" in 1813, illustrated with copperplates.

1726.—**The Jervis Street Hospital, Dublin**, established.

1726-1787.—**Johann Kempf.** Physician of Hesse-Homburg, and propounder of the doctrine of infarctus, from which theory the clyster fashion developed, that was carried to such an excess in the 18th century.

1727-1759.—**Johann Gottfried Zinn.** Professor of medicine at Göttingen. Wrote several treatises on anatomy, including a description of the human eye published in 1755. The "zonule" and the tendon of origin of the eye muscles commemorate him.

1728-1774.—**Oliver Goldsmith.** M.B., but of what university is not known. He is better known as a writer and as the author of the "Deserted Village" and "The Vicar of Wakefield"; was the friend of Dr. Samuel Johnson. He appears to have made an attempt to practise at Bankside, Southwark.



1728-1793.—John Hunter. Surgeon and comparative anatomist. Brother of William Hunter. Became surgeon to St. George's Hospital, London, 1768. Surgeon extraordinary to the King, 1776, and Surgeon-General to the English forces, 1790. First to describe phlebitis and the muscular layer of the iris, also to advocate ligature of large arteries in their continuity. His great collection forms the chief part of the Hunterian Museum of the Royal College of Surgeons, London. He placed English surgery on a scientific basis and was the most original and stimulating teacher of surgery of his time.

1728-1797.—Simon André Tissot, of Lausanne. Physician, professor at Pavia. Prolific writer of popular medical works which were widely translated.

1728-1799.—Joseph Black. Physicist and chemist, a pupil of William Cullen. Professor of medicine and chemistry at the Universities of Glasgow and Edinburgh. He established the doctrine of latent heat, of fusion and of vaporization, and discovered carbonic acid gas. He was called "The Nestor of the chemistry of the eighteenth century."

1728-1813.—Charles White, of Manchester. Surgeon and obstetrician. De Quincey says of him

"he was the most distinguished surgeon in the North of England. He measured innumerable skulls illustrating all the races of men." He was appointed surgeon to the Manchester Infirmary when it was established in 1752. He placed midwifery on a rational and humane basis.

1729-1799.—**Lazzaro Spallanzani**. Abbé and physiologist. Professor of logic, metaphysics and Greek in the Italian University of Reggio, and afterwards professor of natural history at Pavia and Modena. Pioneer in the physiology of digestion and of morphology by the experimental method.

1730-1785.—**Mlle. Bihéron.** Anatomical modeller, of Paris. Her method is not known, but her models were the wonder of all who saw them. She gave a demonstration before the Académie Royale des Sciences on the occasion of the visit of King Gustavus III of Sweden, and taught anatomy privately. Her collection was bought for Catherine II of Russia.

1730-1805.—**Abbé Félix Fontana.** Professor of philosophy in Pisa. Director of the Museum of Natural History at Florence under the patronage of the Grand Duke Leopold, by whose orders he prepared wax anatomical models and a museum of natural history. The lymphatic spaces in the eye commemorate his name.

ca. 1762.—**Antonio de Gimbernat.** Professor at Barcelona, 1762-1774. Director of the College of

Surgeons in Madrid, and surgeon in ordinary to the King. Published in 1793 "A new method for operations for crural hernia," in which he described the ligament by which he is remembered.

1731-1802.—Erasmus Darwin. Physician, philosopher and physiologist. Born at Nottingham. Studied in Edinburgh. Practised in Lichfield, Radbourne and Derby. According to his theories, there are two fundamental substances, spirit and matter, and the principle of life is motion. He wrote "Loves of the Plants" and "Zoonomia," which in some degree foreshadowed the hypotheses of his grandson Charles Darwin.

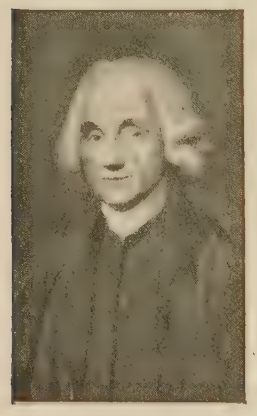
1731-1810.—Henry Cavendish. Son of Lord Charles Cavendish. Chemist and scientist. Discoverer of the composition of air. The inventor of Cavendish's eudiometer. In 1776 he discovered hydrogen. He determined the composition of water and was one of the earliest workers on the subject of specific heat. He improved the thermometer.

1732-1778.—Karl Gottlieb Wagler. Anatomist and University Prosector at Göttingen and Brunswick. Described typhoid fever and its etiology, which he attributed to contaminated springs, in his

classical work "De morbo mucoso liber singularis," Göttingen, 1765.

1732-1810.—Jean Descemet. Professor of physiology and surgery in Paris, where he practised. In 1758 he published an inaugural thesis on the corneal membrane. He shares with Demours the honour of discovery of the membrane which bears his name.

1733-1804.—Joseph Priestley. Chemist and scientist. Originally a Nonconformist minister. While at Leeds he turned his attention to scientific researches, the results of which he published in "Experiments and Observations on different kinds of Air," 1774. He described nitric and nitrous oxide gas, ammonia and hydrochloric acid gas. On August 1, 1774, he discovered dephlogisticated air, afterwards called oxygen by Lavoisier. He died at Northumberland, America, 1804.



1733-1816.—Thomas Denman. Obstetrician. He recommended artificial induction of premature labour in cases of great contraction of the pelvis, and observed the carrying of puerperal fever by physicians and nurses. He invented a special forceps and was the author of "Introduction to the Practice of Midwifery," London, 1787.

1733-1817.—Alexander Monro, secundus. Younger son of Monro, primus. Appointed assistant professor with his father in Edinburgh in 1755 and lectured there until 1800, when his son began to assist him. Published various anatomical works and engaged in a controversy with William Hunter concerning the priority of certain discoveries in the lymphatic system. He first described the "foramen of Monro" in 1764, having observed it in a case of hydrocephalus.

1734-1815.—Friedrich Anton Mesmer. Born at Iznang in Switzerland, educated in medicine, law and theology. Practised and wrote on mesmerism and magnetism as therapeutic agencies. Held lucrative séances in Paris, doing much harm and some little good by drawing attention to what afterwards became known as hypnotism.

ca. **1734.—William Giffard.** The first to describe and *depict* midwifery forceps. Surgeon and obstetrician. Author of "Cases of Midwifery," 1734, in which he describes and depicts the forceps used in England. He states he employed his "extractors" in 1726.

1734.—St. George's Hospital, London, established.

1735-1788.—John Brown. Born at Dunse, Scotland. Studied at Edinburgh. Physiologist and author of "Elementa medicinae," 1780, in which he propounds a system of medicine

called after him the Brunonian system, which gained many adherents.

1735-1794.—Gaspar Friedrich Wolff. Professor of anatomy at Petrograd. He published in 1759 a work on reproduction, in which he described the "Wolffian" duct of the pronephros, and the mesonephric body.

1736-1801.—Thomas Fowler. English physician. Kept an apothecary's shop in York, 1760-1774. Graduated M.D., Edinburgh. Practised in Stafford and York. In 1786 he published his treatise on arsenic and originated the formula for "Fowler's solution" (liquor arsenicalis B.P.).

1736.—The Edinburgh Infirmary established.

1736-1819.—William Hey. F.R.S., senior surgeon to the Leeds Infirmary, which he was largely instrumental in founding He lectured on anatomy in Leeds, and was a friend of Priestley. Author of various surgical observations. "Hey's ligament" commemorates his name.

1737-1798.—Aloysius Galvani, of Bologna. Physician and physicist. Professor of anatomy at Bologna. His researches concerning the contractions produced in the muscles of frogs by contact with metals, led to his discovery of galvanic or voltaic electricity. He wrote "De viribus electricitatis in motu musculari commentarius," 1791.

1738-1814.—Joseph Ignace Guillotine. M.D. of Rheims. Practised in Paris and acted as one of the deputies for Paris at the beginning of the

French Revolution. The machine for decapitation which has immortalized his name was first used on April 25, 1792.

1739-1774.—William Hewson. A pupil of the Hunters, and assistant to William at Windmill Street. Practised surgery and midwifery in London. In 1772 gave lectures on anatomy in his own house, and attained a very great reputation as a teacher. He performed many laborious dissections and injections on living and dead animals, for which he received the Copley medal of the Royal Society.

1739-1808.—Heinrich Auguste Wrisberg. Professor of anatomy at Göttingen. He published his observations on Nerves between 1780 and 1800. He is remembered by the "nerve of Wrisberg" and the "pars intermedia" of the 7th nerve.

1740-1800.—Mathias Saxtorph. Professor of midwifery at Copenhagen. He wrote the first handbook on anatomy in the Danish language and devised a midwifery forceps.

1740.—The London Hospital established.

1740-1804.—Thomas Percival, M.D.Edinburgh, F.R.S. Practised first at Warrington and afterwards at Manchester. Founder of the Manchester Literary and Philosophical Society. Obtained a census of Manchester in 1773, and did much to promote the public health of the town.

1740-1817.—Johann Heinrich Jung-Stilling. Ophthalmologist. Professor at Marburg and of political

economy at Heidelberg. Friend of Goethe. Author of literary works, autobiography and the description of an operation for cataract.

1741-1770.—William Stark. He was the earliest writer to distinguish between tuberculosis and scrofulosis. His work on clinical and anatomical observations, with experiments, dietetical and statical, was published in 1788. In "Medical Communications," published in 1785, his treatise on miliary tuberculosis, he describes his investigations on that subject.

1741-1799.—William Withering. M.D.Edinburgh. Practised at Edgbaston, near Birmingham. Introduced digitalis into medicine in "An Account of the Foxglove and some of its Medical Uses," 1785.

1742-1786.—Carl Wilhelm Scheele. Apothecary and chemist. Born at Stralsund, Sweden. Discovered nitrogen, hydrocyanic, oxalic and uric acids, glycerin, tartaric, citric, lactic, gallic, benzoic and other acids. He also isolated sugar of milk and discovered the method of producing prussian blue. His name is commemorated in Scheele's green in acknowledgment of his work on compounds of arsenic. He died at Koping in 1786.

1742-1787.—Maximilian Stoll. Epidemiologist and clinical teacher. Studied in Vienna, and formulated a system of medicine. He advocated an extensive use of emetics and laxatives.

1743-1793.—Jean Paul Mara Marat. Physician and revolutionist. Born in Switzerland. M.D. of St. Andrews, 1775; practised in London. Took an active part in the French revolution and was assassinated in his bath by Charlotte Corday in 1793.

1743-1794.—Antoine Laurent Lavoisier. French chemist. Studied at the Collège Mazarin, Paris, and was admitted to the Academy of Sciences, 1768. Priestley visited him in Paris in 1774 and explained his discovery of dephlogisticated air. Lavoisier repeated the experiment and gave the name of oxygen to the gas. He made a complete investigation of its properties. The substitution of his theories for those of the phlogistonists led to a complete revision of the language of chemistry. Lavoisier fell a victim of the French revolution and was guillotined in 1794.

1744-1815.—John Coakley Lettsom. Quaker physician. Born in the West Indies, practised in London. One of the founders of the Medical Society of London. "The Friend of Humanity, the Patron of Science." The Ipomoea, a climbing plant, and a beautiful shrub now included in Fraziera, are both called Lettsomia after him.

He was one of the founders of the Royal Sea-Bathing Hospital at Margate.

1744-1829.—**Jean Baptiste de Lamarck.** French naturalist. He was fifty years of age before he began to study zoology. Published in 1809 his "Philosophie zoologique," and in 1816 his "Natural History of Invertebrates" in 7 vols. Introduced many reforms into the classification of animals and was the father of the modern evolutionary doctrine on a teleological basis, his idea being that new organs or new modifications are formed in direct reaction to needs experienced by a "sentiment intérieur." His ideas took gradual root in France, which was relatively unaffected by the alternative theory of natural selection introduced by Darwin.

1745-1800.—**William Cumberland Cruikshank.** Succeeded Hewson in William Hunter's school of medicine and followed William as lecturer. After Hunter's death he continued the school in conjunction with Matthew Baillie. Attended Dr. Samuel Johnson in his last illness and was termed by him a "sweet-blooded man."

1745-1813.—**Benjamin Rush.** American physician and philanthropist. Professor of Chemistry at Philadelphia. He was a member of Congress in 1776 and signed the Declaration of Independence. Surgeon-General to the Army. Professor of the Institutes of Medicine in the

University of Pennsylvania and a Founder of the Pennsylvania Dispensary in 1786. His successful treatment of yellow fever in the epidemic of 1793 enhanced his reputation. Among his works were "Medical Enquiries and Observations" and "A Treatise of Diseases of the Mind."

1745-1818.—Joseph Barth, of Malta. Anatomist and professor at Vienna. Oculist to Joseph II and the first to give separate lectures on ophthalmology. He founded an ophthalmic hospital.

1745-1827.—Alessandro Volta. Italian physicist and professor at Como and Pavia. His researches in electricity led to his invention of the voltaic pile (1800), the electrophorus and electroscope.

1745.—Separation of Barbers from Surgeons in England.

1745.—Middlesex Hospital founded.

1745.—London Lock Hospital founded.

1746-1810.—Jean Louis Baudelocque, of Paris. Obstetrician who invented a type of midwifery forceps and an external pelvimeter based on his views about the pelvis. Author of "L'Art des Accouchements," Paris, 1781.

1747-1832.—Antonio Scarpa, of Motta. Surgeon and anatomist. A pupil of Morgagni. Professor at Modena and Pavia. Studied hernia, orthopædics and ophthalmic surgery. His works are beautifully illustrated, being models of anatomical accuracy combined with the per-

fection of engraving. His name is now well known in connection with "Scarpa's triangle."

1748-1794.—Félix Vicq d'Azyr. French anatomist. Chief physician to Marie Antoinette. One of the founders and Perpetual Secretary of the Société Royale de Médecine Published a treatise on anatomy and physiology and works on veterinary medicine.

1748-1833.—Adamantios Koraes. M.D. of Montpellier. Translator of medical books and accumulator of notes for an edition of Hippocrates. The great popular reformer of the Greek system of instruction. He methodized the literary language of his countrymen. Koraes and Capodistrias (also a member of the medical profession) were the originators of modern Greek independence of Turkish rule.

1749-1832.—Johann Wolfgang Goethe. Philosopher and poet. The first to express definitely the idea of the unity of plan in comparative anatomy. He discovered the intermaxillary bone in man in 1784, and explained differences in the organs of plants by variations in the sap supplied to them, his idea being that all parts were equally varieties of one abstract "plant part." He enunciated the law of balance, viz., that to no part can anything be added without something being taken away from another part, and *vice versa*. He was thus the prophet of nineteenth century morphology.

1749-1823.—Edward Jenner. Born at Berkeley, Gloucestershire. After serving his apprenticeship with a firm of surgeons in Sodbury he came to London and became a house-pupil of John Hunter. He began to investigate cowpox, a disease contracted by dairymen from infected cows in 1780. He found that the matter taken from a human being suffering from cowpox had the power of protecting another individual from smallpox, which he eventually confirmed after a series of experiments. In 1796 he inoculated a boy of eight years with matter taken from a pustule on the hand of a dairy maid suffering from cowpox; after an interval he inoculated the boy with smallpox matter and found that he did not contract the disease. He published the result of his experiments in 1798. Jenner's great discovery of vaccination soon became known and was practised throughout the world with successful results. He received a grant of £10,000 from Parliament which was followed by a further grant of £20,000 in 1806, for his discovery. He died at The Chantry, Berkeley, the house where he had originally practised, in 1823.

1750-1795.—François Chopart. French surgeon. Called

by his mother's name, his father being François Turlure. Graduated 1770. Author, with Desault, of a "Treatise on surgical maladies." He gave his name to an amputation of the foot.

1752-1808.—**John Sheldon.** Assistant to William Hunter whom he succeeded as professor of anatomy to the Royal Academy. Surgeon to the Westminster Hospital. The first Englishman to ascend in a balloon at Chelsea, 1784. Gave much attention to injections and embalming, and completed Hewson's work on the lymphatics. A portrait of him in oils hangs in the Royal Devon and Exeter Hospital to which he was surgeon for many years.

1752-1815.—**Paolo Mascagni, of Casteletto.** Professor of anatomy at Siena, Pisa and Florence. He studied the lymphatics, and was author of an anatomical atlas with life-size plates, which was published posthumously in 1816.

1752-1840.—**Johann Friedrich Blumenbach.** Anthropologist. Professor of anatomy at Gotha. Physician to the Kings of Great Britain and Holland. Wrote on human and comparative anatomy and on the varieties of the human race. He gave his name to the slope of the basi-occiput and sphenoid inside the skull.

1753-1811.—**John Christopher Stark.** Obstetrician. He devised "Stark's forceps," a placental spoon and instruments for Cæsarean section.

1754-1846.—Benjamin Waterhouse. Professor of Medicine in Harvard College. Was the first to introduce vaccination into the United States.

1755-1817.—Sir James Earle. Surgeon to St. Bartholomew's Hospital and inventor of the treatment of hydrocele by injection (1791). Son-in-law of Percivall Pott, whose works he edited and published in two editions dated 1790 and 1808.

1755-1826.—Philippe Pinel. The first to improve the condition of the insane. He placed them in hospitals under the charge of physicians and classified the patients according to the character of their diseases. He urged the necessity of their treatment by gentle means and recommended physical labour in place of corporeal punishments and inhuman physical restriction. His work "Traité médico-philosophique sur l'aliénation mentale, ou la manie," Paris, 1801, marked an epoch in the study of psychiatry.

1755-1826.—Joseph Louis Proust. French chemist. Became a professor of chemistry at Madrid. He established the fact that chemical combination occurs only in definite proportions by weight and that every chemical compound is definite in its nature, the ratio between its constituent elements being invariable.

1755-1830.—Samuel Thomas von Soemmering. Physician to the King of Bavaria. Professor of anatomy at Mayence, Frankfort and Munich. Published various works on anatomy, particu-

larly on the nervous system and the eye. He believed that the nerves act independently of the brain, which he did not consider necessary to the continuance of life.

1755-1843.—**Samuel Christian Friedrich Hahnemann.** Born at Meissen. Educated at Erlangen. Founded his system of homœopathic medicine in 1805, on the principle that "similia similibus curantur," and that infinitesimally small doses of drugs were effective.

1756-1805.—**James Currie, of Liverpool.** He advocated affusions in acute disease, especially in typhus, and was the first to insist on the importance of the temperature of the patient. Currie's observations are contained in his treatise on "Medical Reports on the effects of water, cold and warm, as a remedy in febrile diseases," 1797. He was one of the founders of the Liverpool School of Medicine and published an edition of the poems of Burns.

1757-1817.—**William Charles Wells,** M.D. Born at Charlestown, South Carolina. He was educated in Scotland, practised in London and became physician to St. Thomas's Hospital. He determined experimentally in 1814 that "Dew is the production of a preceding cold in the substances upon which it appears." He differentiated between the various causes of dropsy, and established the fact that albumen was present in the urine of persons suffering

from dropsy. Darwin in his "Origin of Species" gives Wells the credit of being the first to enunciate the principle of natural selection in 1813.

1758-1822.—James Gregory, of Aberdeen. Successor to Cullen as professor of the practice of medicine at Edinburgh. He advocated the doctrines of Cullen, and his name is familiar from the compound rhubarb powder known as "Gregory's powder" (pulv. rhei co., B.P.). He wrote a conspectus of medicine, 1766, which had a wide circulation, and he exerted much influence on the development of medicine in Great Britain. He considered the muscles and nerves together a nervous element which was excited by the heart.

1759.—Physick Garden at Kew opened.

1759-1813.—Johann Christian Reil. Physician and professor of medicine at Halle and Berlin. He elaborated the doctrine of vital force, which contended that each organ has its own special force, but is united in sympathy with the rest of the body. Changes of composition are the basis of all the manifold phenomena in conditions of health and disease, and in these lies the proximate cause of disease. He founded the first Journal of Physiology and the first

Journal of Psychiatry. His name is associated with the "island of Reil" in the brain.

1759-1816.—Franz Caspar Hesselbach. Surgeon and anatomist. Pupil of Von Siebold and teacher of Langenbeck. Professor of surgery at Würzburg. Published a manual of dissection and a treatise on hernia. Hesselbach's triangle and ligament commemorate him.

1760-1818.—Caspar Wistar. Teacher of anatomy at Pennsylvania. His "System of Anatomy," 1811, was the first work on the subject published in the New World. The "Wistaria" vine was named after him.

1761-1823.—Matthew Baillie. Physician. The father of medical pathology. He published "The Morbid Anatomy of some of the most Important Parts of the Human Body" in 1793, illustrated with copperplates by William Clift (page 187). He demonstrated the pathological anatomy of the brain, the heart and the lungs, in which in 1793 he was the first to point out the grey miliary tubercles of consumption. He was a nephew of William and John Hunter, whose private school he carried on.

1762 1838.—John Rutley. Quaker. Physician to the Liverpool Dispensary. One of the founders of the Liverpool Athenæum in 1797 and of the Liverpool Medical Institution, 1835. With William Roscoe and Dr. James Currie he laid the foundations of medical study in Liverpool.

1763-1820.—John Bell. Surgeon and anatomist. Elder brother of Sir Charles Bell. Professor of surgery and obstetrics at Edinburgh. Author of a "System of the Anatomy of the Human Body," 1793-98, and "Principles of Surgery," 1801-07. He had great artistic powers, and illustrated his own works. He was an excellent classical scholar, and one of the most skilful operators of his day.

1763-1832.—Sir Everard Home. Professor at the Royal College of Surgeons, brother-in-law of John Hunter, who entrusted him with the duty of describing his collection.

1764-1831.—John Abernethy. Surgeon and anatomist. Professor of anatomy and surgery in the Royal College of Surgeons. Founder of the Medical School at St. Bartholomew's Hospital. His surgical teaching was based on physiology rather than on anatomy. He was the first to ligature the external iliac artery for aneurysm in 1796, also the common carotid for hæmorrhage in 1798, and improved the treatment of lumbar abscesses by incision.

1766-1822.—Wright Post. Surgeon of Long Island, New York. The first American surgeon who successfully tied the femoral, subclavian and common carotid arteries.

1766-1842.—Dominique Jean Larrey. "Baron Larrey." French military surgeon who served with Napoleon throughout his great wars. He was the first to amputate at the hip joint. Surgeon-in-chief to the "Grande Armée," and is said to have performed two hundred amputations in one day. He invented the "flying ambulances." He was professor of medicine at the École de Médecine, Paris, and wrote "Memoirs of Military Medicine," 1817.

1766-1844.—John Dalton. Meteorologist, physicist and chemist. Of humble Quaker origin in Cumberland, he became a D.C.L. and LL.D., of Oxford and Edinburgh Universities. He developed the primary laws of heat and chemical combination and laid the foundation of chemical notation. He applied the atomic theory to chemistry. In 1794 he gave to the Literary and Philosophical Society at Manchester the first detailed discovery of colour blindness which was afterwards known as "Daltonism."

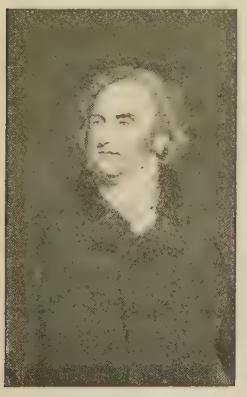
1766-1844.—Sir Henry Halford, Bt. F.R.S., M.D Oxon. President of the Royal College of Physicians. Physician to George III, George IV, William IV and Queen Victoria. His name originally was Henry Vaughan. Succeeded Matthew

Baillie in the chief practice in London. He obtained from the Crown a grant of the site of the present college in Pall Mall East.

1766.—Cavendish discovers hydrogen.

1768-1837.—Philip Syng Physick. Pupil of John Hunter. Professor of surgery in the University of Pennsylvania in 1805. He has been called the "Father of American Surgery." He was the inventor of a tonsillotome.

1768 1841.—Sir Astley Paston Cooper. Anatomist and Surgeon to Guy's and St. Thomas' Hospitals, Surgeon-in-ordinary to George IV and Queen Victoria. He counted the day lost when he did not actually dissect some part of the body in his private dissecting room, and often made presents of whole subjects to those of his friends who were unable to obtain them. President of the Royal College of Surgeons, 1827 and 1836. He was especially interested in the subjects of hernia, fractures and dislocations.



1769-1859.—Friedrich Heinrich Alexander Freiherr von Humboldt. Traveller, naturalist and diplomat. Educated at Frankfort and Göttingen. Travelled extensively in South America and in Central Asia.

1770-1843.—James Macartney. M.D. Professor of anatomy and chirurgery in the University of Dublin. He was the first in Great Britain to teach systematic comparative anatomy to medical students and the first systematic lecturer on pathology. He was a pioneer in the teaching of physiological psychology and one of the foremost reformers in practical surgery.

1771-1802.—Marie François Xavier Bichat. French surgeon. First studied at Nantes, and afterwards at Lyons and Montpellier in the department of surgery under Petit. He removed to Paris and gave private courses in surgery and anatomy. In 1801 he was appointed to the Hôtel Dieu. He was a man of great mental activity and power, an ardent morbid anatomist, and died at the early age of 31. His chief works were the "Traité des Membranes," 1800, "Recherches physiologiques sur la vie et la mort," 1800, and "Anatomie Générale," 1801. He worked out in detail the distinctions between animal and vegetative functions, and was the founder of the study of normal and pathological histology.

1771-1820.—Johann Christian Rosenmüller. Professor of anatomy and surgery in Leipzic. He published "Descriptive anatomy of the lachrymal

apparatus" in 1797, and a work on the fœtal ovary in 1802, in which he described the collection of embryonic remnants known as the organ of Rosenmüller.

1771-1830.—Ephraim McDowell. American surgeon, born in Virginia. "The father of ovariotomy." Educated at Edinburgh. Practised in Kentucky from 1795. Performed the first ovariotomy at Danville on Mrs. Jane Todd Crawford in 1809, but did not publish it until 1817, when he met with a storm of opposition. The operation was not repeated in the U.S.A. until 1821.

1771-1843.—Elisha North. A medical practitioner of Connecticut. He was a pioneer in Jennerian vaccination; established the first Eye Infirmary in the U.S.A. (New London, 1817), and published the first book on "spotted fever." In the course of this work he recommends the use of the clinical thermometer.

1771-1844.—Étienne Geoffroy, Marquis de St. Hilaire. French morphologist. Professor of zoology at the Jardin des Plantes in Paris. He endeavoured to found a science of pure morphology and his basic idea was that of an abstract generalized type of animal to which all living beings could be compared. He admitted the possibility of one form giving rise to different forms by sudden transformation, but was not strictly an evolutionist. He insisted on the priority of structure over function.

1772-1838.—François Joseph Victor Broussais. Born at St. Malo, Brittany. Military surgeon with the armies of Napoleon in Holland, Germany, Austria and Spain. Propounded the theory of "Physiological Medicine," and so treated patients by starving and leeching that he and his followers raised the import of leeches in France from two or three millions a year to forty-one millions. Published his "Traité de physiologie appliqué à la pathologie" in 1834.

1772.—Priestley discovers nitrous oxide.

1773.—Medical Society of London founded.

1773-1829.—Thomas Young. A Quaker physician. The discoverer of phonetic hieroglyphics from the study of the Rosetta stone. One of the master minds of the nineteenth century. He appears to have been equally at home in the classics, in physics, mathematics, philology, music, biography and actuarial science. Physician to St. George's Hospital in London.

1773-1831.—Luigi Rolando. Professor of anatomy in Turin and author of various works on the brain, giving his name to several parts therein. He likened the cerebellum to the voltaic pile.

1773-1841.—Marie Anne Victoire Gillain Boivin. M.D. Marburg (hon. causa). Famous obstetrician of Paris. Dupuytren said of her: "Qu'elle avait un œil au bout du doigt." Invented a trivalve expanding speculum and was the first to demonstrate the nature of the hydatid mole. Author of "Mémorial de l'art des accouchements" in 1812; "Recherches sur une des causes de l'avortement," 1828, and in collaboration with Dugès, "Traité pratique des maladies de l'utérus et de ses annexes," 1833. Midwife-superintendent of the Maison Royale de Santé.

1774.—Priestley published his discovery of dephlogisticated air (oxygen), and discovers ammonia gas.

1774-1819. Robert Watt. Physician and bibliographer. M.D. Aberdeen. Practised at Paisley and afterwards at Glasgow, where he lectured on the theory and practice of medicine. The "Bibliotheca Britannica" began to be published in 1819, and was completed posthumously in 1824. It was designed to form a general index of the literature of Great Britain and Ireland, ancient and modern, including such foreign works as have been translated into English or printed in the British Dominions. He also

published "An enquiry into the relative mortality of the principal diseases of children" in 1813. It is an appendix to his "Treatise on the Chincough."

1774 - 1842. — Sir Charles Bell. Surgeon. Younger brother of John Bell and endowed with equal artistic power. Surgeon to the Middlesex Hospital. Discovered that the posterior roots of the spinal nerves presided over sensation and the anterior over motion, in 1816. "Bell's palsy" as a synonym for facial paralysis commemorates his name. His "Anatomy of Expression" was published in 1806. Became professor of surgery at Edinburgh in 1836. Published "A New Idea of the Anatomy of the Brain and Nervous System" in 1811.

1774-1844. —John Conrad Otto. Graduated at Pennsylvania 1796. He played an active part in the cholera epidemic of 1833 and was the first to give an account of hæmophilia in 1803.

1775-1843.—Abraham Colles Professor of anatomy and surgery in Dublin. A masterly operator. Tied the subclavian artery for aneurysm—the third time it had been done in the British Isles, and was the first to tie the innominate. He is

remembered by "Colles' fracture" at the wrist, "Colles' fascia" and "Colles' law."

1775-1849.—William Clift. Prosector to John Hunter, and curator of his Museum, subsequently conservator of the Museum at the Royal College of Surgeons. After the death of John Hunter he lived on in great poverty in the empty Castle Street house, where he employed himself by transcribing Hunter's MSS. To this we owe the preservation of much material.

1775.—Lavoisier defines oxygen.

1776-1847.—Carl Friedrich Burdach. Professor of anatomy and physiology at Dorpat, Königsberg and Breslau. Published a treatise on "The Structure and Life of the Brain and Spinal Marrow," in 1819. The "column of Burdach" was described in this work.

1776-1856.—Amedeo Avogadro. Italian chemist and professor of mathematical physics at Turin in 1820. He was the first to demonstrate that the molecules of many elements are composed of more than one atom.

1777-1835.—Guillaume, Baron Dupuytren. French surgeon and anatomist. Professor of surgery in Paris. Chief surgeon of the Hôtel Dieu. First surgeon to Charles X. Contributed to the knowledge of morbid anatomy. Invented some surgical instruments and improved many operations. His name is commemorated in "Dupuytren's contraction" of the palmar fascia.

1777-1836.—John Cheyne. Born at Leith; educated at Edinburgh, practised in Dublin and became physician-general to the forces in Ireland. He described "Cheyne-Stokes respiration" in 1818. He also described acute hydrocephalus.

1778-1829.—Sir Humphry Davy. P.R.S. Physicist and chemist. Born in Penzance, Cornwall, and began life as an apprentice to a surgeon and apothecary. His researches in electrochemistry were carried on at the Royal Institution, London, where he became a lecturer in 1801 and had Michael Faraday as his assistant. He discovered the metallic elements potassium and sodium. His investigation of gases led to his discovery of chlorine, euchlorine and fluorine. In 1815 he invented the safety-lamp for miners. He died at Geneva and his tomb is in the cemetery of that city.

1778-1850.—Joseph Louis Gay-Lussac. French chemist. Became professor of chemistry in the École Polytechnique, Paris, and also professor of physics at the Jardin des Plantes. The originator of volumetric analysis and many improvements in the manufacture of chemicals.

1778-1856.—John Collins Warren. Surgeon and first professor of anatomy and surgery at Harvard. While surgeon of the Massachusetts General

Hospital he was the first to administer ether for the purpose of surgical anæsthesia as suggested by Morton.

1779-1848.—Jons Jacob Berzelius. Swedish chemist. He supported Dalton's atomic theory and inaugurated the quantitative as distinguished from the qualitative era in chemistry.

1779-1851.—Lorenz Oken. Morphologist and embryologist. Professor of medical sciences at Jena and later at Zurich. He elaborated the idea of parallelism, and taught that every animal in its development passes through the stages representing the classes immediately below it. He laid the foundations of the vertebral theory of the skull.

1781-1826.—René Théophile Hyacinthe Laënnec. Born in Brittany. Studied at Nantes; served as military surgeon; professor of clinical medicine at Paris. In 1806 he was appointed physician to the Hôpital Beaujon and in 1816 became physician to the Hôpital Necker. He invented the stethoscope in 1815, and published his classical treatise on auscultation in two volumes in 1819. By his discoveries he rendered important services to medicine.

1781-1868.—Sir David Brewster. Physicist who studied optics and the physiology of the eye. Founder

of the "British Association for the Advancement of Science," 1831. Inventor of the stereoscope.

1782-1855. **François Magendie, of Bordeaux**. Professor of general pathology in the Collège de France and physician to the Hôtel Dieu. He founded a new epoch in French medicine and introduced the experimental method into pathology and pharmacology.

1783-1843.—**Louis Levin Jacobsen**. Danish surgeon. Invented the lithoclast. He described the organ in the nose which bears his name in 1811, and published "New Nervous Anastomosis" in 1819.

1783-1858.—**Benjamin Travers**. Serjeant-surgeon to Queen Victoria and first pupil of Sir Astley Cooper. He introduced the idea of "constitutional irritation," which he considered was derived from the nervous system, or rather he considered the latter the route of transmission of the "irritation" to the whole body.

1783-1860.—**John Lizars**. Professor of surgery at the University of London and afterwards in Edinburgh. A pupil of John Bell. He was a distinguished operator and several times extirpated the ovary. Author of "Observations on extirpation of diseased ovaria," 1825, and a "System of anatomical plates," London, 1822-1826.

1783-1862.—Sir Benjamin Collins Brodie. Surgeon, Anatomist and physiologist. President of the Royal Society; Surgeon to St. George's Hospital. Author of "Pathological and surgical observations on diseases of the joints," 1818.

1784-1845.—Gilbert Breschet. French physician. Professor of anatomy at Paris. Published 1827-1830 "Anatomical, pathological and physiological investigations on the venous system." The chief venous sinus accompanying the middle meningeal artery bears his name.

1785-1852.—Daniel Drake. Well known for his work on the topography of disease. He published many papers on professional subjects, his chief work being "Diseases of the Interior Valley of North America" (1850-1854) and an encyclopædia on the Mississippi Valley. He was the founder of sound medical education in Cincinnati.

1785-1853.—William Beaumont. Surgeon in the U.S. Army. The first to study digestion and movements of the stomach *in situ*, publishing in 1833 his famous "Experiments and Observations" on a case of accidental gastric fistula, which foreshadowed the work of Pavloff. His experiments form the foundation of modern dietetic tables and scales.

1785-1856.—George James Guthrie. Military surgeon. Surgeon to the Westminster Hospital, London. He accompanied Wellington on many of his

campaigns. Author of "A treatise on gunshot wounds."

1787-1869.—Jan Evangel Purkinje. Professor of pathology and physiology at Prague and Breslau. He made some important discoveries in physiology. Published in 1838 "A Description of the Central Nervous System." The cells of Purkinje in the cerebellum commemorate his name.

1787-1872.—Pierre Charles Alexandre Louis. He was the first to apply the "numerical method" to pathology and was opposed to Broussais' theories. He was appointed physician to the Hôpital de la Pitié, 1835, and published his work, "Recherches anatomiques, pathologiques et thérapeutiques: sur la phthisie," in 1825, which was founded upon 358 dissections and 1960 cases of phthisis. It was translated into German and twice into English.

1788-1833.—Johann Friedrich Meckel. Professor of surgery and anatomy at Halle. Grandson of Meckel the anatomist [1714-1774], after whom the ganglion is named. Published contributions to comparative anatomy and devoted much time to a detailed proof of the parallelism between the embryonic states of higher animals and the permanent states of lower animals, hinting that the development of the individual is the repetition of the history of the race. He founded modern zootomy and teratology in Germany and was called "the German Cuvier."

His name is associated with "Meckel's cartilage."

1789-1832.—George Christian Leopold Dagobert, Baron Cuvier. One of the greatest comparative anatomists. Professor of natural history in the Collège de France. He was the foremost champion of the fixity of species and the superiority of function over form, and the opponent of St. Hilaire. Published in 1800 "Leçons d'anatomie comparée," and in 1817 "Le règne animal." The corner-stone of his work is the principle of correlation, namely that each part depends in form and function on every other part.

1789-1858.—Richard Bright, M.D.Edinburgh. Clinical physician. Born at Bristol, educated at Edinburgh. Physician to Guy's Hospital in London and to the London Fever Hospital. His name is associated with those morbid conditions of the kidney known as "Bright's Disease." His "Reports of Medical Cases" published in 1827, which contained his description of essential nephritis and distinguishing between cardiac and renal dropsy, established his reputation throughout the world. He reformed the knowledge of renal pathology.

1790-1834.—Gustav Gaertner. Danish embryologist and practitioner. He described the duct in the sow, which bears his name, in 1822. He named it "the Malpighian duct" as Malpighi had described it in the calf in 1681.

1790-1847.—Thomas Lisfranc. Chief surgeon of the Hôpital de Pitié, Paris. Author of anatomical works. He is remembered in eponymy by the scalene tubercle of the first rib and the amputation at the tarso-metatarsal joint.

1790-1856. — August Wilhelm Edward Theodore Henschel. Medical historian. Professor of medicine at Breslau. He was editor of the original series of *Janus* (1846-1851), the first journal devoted to the history of medicine.

1790-1857.—Marshall Hall. M.D. Edinburgh. Practised in Nottingham 1817 to 1826, and afterwards in London. Engaged in research on the capillary circulation, in the course of which he was led to picture for the first time the reflex arc and the action of the spinal cord in the production of tonus. He was the first to realize that the spinal cord is not a cable of nerves, but an active workshop teeming with intricate mechanisms.

1790-1883.—Jules German Cloquet. Professor of clinical surgery in Paris. He is remembered by the canal and gland of Cloquet, and a textbook of anatomy in 5 volumes illustrated with fine plates. Published works on hernia and other surgical subjects. Not to be confused with

Hippolyte Cloquet, rhinologist, 1787-1840, who was professor of anatomy in Paris, and author of "Traité d'anatomie descriptive," which was published in 1816. It ran through six editions and was translated into English.

1791.—The first Veterinary School founded in England at the London Veterinary College.

1791-1867.—Michael Faraday. Began the study of science as assistant to Davy at the Royal Institution. In 1824 he commenced the electrical researches which made him famous. He discovered electro-magnetic induction and so rendered possible the invention of the induction coil. In 1845 he discovered the influence of a magnetic field of force on polarized light, and made many other important discoveries in electricity and magnetism.

1791-1868.—John Elliotson. M.D.Cantab. Professor of medicine at the University of London, physician to University College Hospital, and President of the Royal Medical and Chirurgical Society. First to employ hypnotism in surgical operations.

1793-1873.—Thomas Turner. Surgeon and founder of the first provincial medical school in England. He opened the Pine Street School, Manchester, in 1824.

1793-1853. — William Edmund Horner. American anatomist. Professor at Philadelphia, where he founded a museum, which became in his hands one of the richest in the world. He described the muscle which bears his name, in London in 1822. He was author of a work on practical anatomy.

1793-1860.—Martin Heinrich Rathke. Comparative embryologist. Professor of pathology and physiology at Dorpat and of anatomy and zoology at Königsberg. Published many classical papers on the development of vertebrates and homologies of the gill arches and the skeleton. "Rathke's pouch" commemorates him in human embryology.

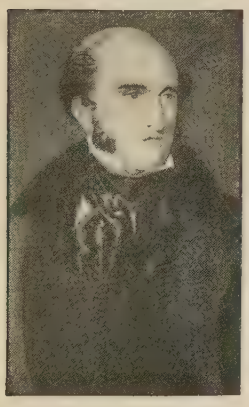
1793 - 1860. — Thomas Addison. Clinical physician. Educated at Newcastle-on-Tyne and Edinburgh. Physician to Guy's Hospital. His name is associated with "Addison's disease" of the suprarenal capsules of which he first gave an account in 1849, and published more in detail in 1855.

1793-1876.—Karl Ernst von Baër (Bär). Professor of Zoology at Königsberg. Founder of embryology. He described the development of many vertebrate types with great minuteness and accuracy and discovered the mammalian ovum. He enunciated the law that development is a

process of differentiation by which the germ becomes more and more individualized from the general to the special. He also described the formation of the germ layers.

1794-1830.—John D. Godman. American anatomist and professor of surgery. He was editor of the first medical journal to be printed west of the Alleghanies, and author of "Contributions to Physiological and Pathological Anatomy," 1825, "American Natural History," 1826, and a treatise on the fascia.

1794-1847.—Robert Liston. Surgeon. The most brilliant surgical operator of his generation in England. The first to employ ether as an anæsthetic, in amputation of the thigh, at University College Hospital, December 21, 1846. He distinguished himself by his dissections, particularly of the elbow-joint. Author of "A Treatise on Practical and Operative Surgery," 1837. He is known for his method of flap-amputation, and in 1836 he excised the upper jaw.



1794-1866.—Benjamin Guy Babington. Physician to Guy's Hospital. He studied diseases of the throat and larynx and invented a type of laryngoscope in 1828.

1794 1866.—Sir Charles Hastings. Physician to the Worcester Infirmary. Investigated the subject of inflammation, and published a treatise on the subject in 1820. Founded the British Medical Association under the title of the "Provincial Medical and Surgical Association" in 1832. The first meeting was held in Worcester Infirmary in July, 1832, under the presidency of Dr. John Johnstone. In 1836 the Society was enlarged and called the British Medical Association. The *British Medical Journal* was founded in 1857.

1795-1858.—Friedrich Schlemm. Professor of anatomy and surgery at Berlin. Author of a work on the eye which was published in 1828-1830. The "canal of Schlemm" commemorates his name.

1795-1860.—James Braid. Surgeon of Fifeshire. Pioneer in scientific hypnosis. Author of "Neurypnology, or the Rationale of Nervous sleep," 1843, in which he holds that mesmeric influence is entirely subjective and personal.

1795-1862.—Thomas Wakley. Medical journalist. A great friend of Cobbett. He founded the *Lancet*, 1823, and was Member of Parliament for Finsbury, 1835. In 1846 he introduced a Bill for Registration which led to the Medical

Act of 1858. In 1851 he drew attention to the adulteration of food, the result being the Adulteration Act, 1860. His action, whilst Coroner for West Middlesex, led to the abolition of flogging in the Army.

1795-1873.—Moritz Heinrich Romberg. Neurologist. Professor of special pathology and therapy at Berlin. His name is associated with "Romberg's sign."

1796-1860.—Anders Olof Retzius. Swedish naturalist and physician. Professor of anatomy at Lund and at a veterinary school at Stockholm. He published a description of the pelvo-prostatic ligaments in 1849, and other anatomical works. He is commemorated anatomically by "the cave of Retzius."

1796-1861.—Francis Adams. General practitioner, of Banchory in Scotland. He found time in the midst of a busy and widely scattered country practice to translate "Paulus Aegineta" in 1834 and the works of Hippocrates in 1849, as well as to write accounts of the Greek, Latin and Arabic medical authors for Barker's edition of "Lemprière's Dictionary."

1797-1824. — Edward Grainger. Anatomist. Taught anatomy in London, and established a private medical school which was carried on after his death by his brother Richard. Wrote "The Elements of General Anatomy," which was the

first special work on the anatomy of the tissues in English form.

1797-1838.—Antoine Louis Dugès. Morphologist. Professor of pathology and operative medicine at Montpellier. Wrote a manual of obstetrics and a treatise of comparative physiology. His most important conception was that the living organism was a colony of lesser units, in themselves real organisms. This theory has since often been revived.

1797-1853.—Robert James Graves. Irish physician, professor of the Institutes of Medicine in the King's and Queen's College, of Dublin. Author of "A System of Clinical Medicine," 1843, and "Clinical Lectures," 1848. His name is associated with "Graves' disease," exophthalmic goitre. He gave early descriptions of angioneurotic œdema and scleroderma. He requested that the words "He fed fevers" should be his epitaph.

1797-1858.—Emile Huschke. Professor at Jena and a pupil of Oken. Published a work on splanchnology in 1845 and on the cranium and its contents in men and animals in 1854. In the latter he described the foramen, produced by a

failure of ossification in the tympanum, which bears his name.

1797-1859.—William Fetherstone Montgomery. Irish surgeon. Published a description of the follicles at the areola of the nipple which bear his name, in 1837.

1797-1866.—Thomas Hodgkin. Morbid anatomist. Born near London, educated at Edinburgh. Was Curator of the Museum at Guy's Hospital. He described in 1832 the morbid condition of the spleen and lymphatic glands to which in 1865 Samuel Wilks gave the name of "Hodgkin's Disease."

1797-1882.—Sir Robert Christison. Professor of forensic medicine and materia medica in the Edinburgh University. Pharmacologist and toxicologist. He did much to establish toxicology on a firm scientific basis.

1797-1891.—Jean Baptiste Bouillaud. Professor and chief physician to the Charité, Paris. He contributed to the knowledge of diseases of the heart and their connection with rheumatism and also drew attention to the great value of physical diagnosis. His chief works were "Traité clinique de rheumatisme articulaire" and "Traité clinique des maladies du cœur."

1800.—Sir Humphry Davy discovered the anæsthetic properties of nitrous oxide gas.

1800-1829.—Henry Hill Hickman. Surgeon and general practitioner of Ludlow. He carried out a series

of experiments with anæsthetics on animals by administering carbonic dioxide and nitrous oxide gases. He amputated their legs while under the anæsthetics, but was unable to carry out his experiments on human subjects in England. In 1828 he went to Paris and laid his results, by which he claimed to render patients insensible to pain when under surgical operations, before the Académie de Médecine. He was one of the earliest pioneers in the discovery of a method of producing anæsthesia by inhalation of nitrous oxide gas for the purpose of surgical operation.

1800-1872.—**Salvatore de Kenyia**. Professor of the history of medicine at Naples in 1860. He published two valuable works, "Collectio Saliternitana," and "Storia della medicine Italiana," each in five volumes.

1800-1884.—**Jean Baptiste André Dumas**. French chemist and author of "Traité du Chimie appliqué aux Arts." He established the theory of substitution in chemistry and investigated the composition of carbon-dioxide. He succeeded Gay Lussac as professor at the Sorbonne in 1832, and finally became professor of chemistry at the École de Médecine in 1839. He was the first chemist in France to adopt the system of practical instruction in the laboratories, and added much to our knowledge of organic chemistry.

1800-1885.—Henri Milne Edwards. French naturalist, Professor of entomology, zoology and comparative physiology in Paris. Successor to St. Hilaire. Disciple of Cuvier. Interpreted form on the principle that it is rational and purposive, and rejected Darwinism while admitting the gradation of species from lower to higher forms by the intervention of a supernatural power. Published "Introduction à la zoologie générale," 1851.

1800-1887.—Richard Quain. Surgeon and anatomist. Surgeon-extraordinary to Queen Victoria, and with William Sharpey edited the 5th edition of Jones Quain's "Human Anatomy."

1800-1890.—Sir Edwin Chadwick. The father of modern sanitary science in England. He focused public attention on the broad facts and consequences of public neglect, and endeavoured to bring the public health under the protection of the law.

1801-1858.—Johannes Müller. Professor of anatomy and physiology, Berlin. The son of a shoemaker at Coblenz. He inspired an entire school of original workers. Schwann, Henle, Brücke, du Bois Reymond, Remak, Virchow and Helmholtz acknowledged his influence, and all endeavoured to solve the problems of physiology by the methods of chemistry and physics. He wrote a masterly textbook, "The

Outlines of Physiology" and his name is remembered in the "Müllerian ducts."

1801-1867.—Armand Trousseau, of Tours. Professor in the Faculté de Médecine in Paris and physician to the Hôtel Dieu. He was a pioneer in thoracentesis. He made a specialty of croup and the employment of tracheotomy in that disease. His "Traité de thérapeutique et de matières medicales," par Trousseau et Pidoux, ran through eight editions in France and was translated into English, Spanish and Italian.

1801-1881.—Maxmilien Paul Emile Littré. Lexicographer and medical historian. Author of the great dictionary of the French language and of the best editions of the works of Hippocrates and of Pliny. He is not to be confused with Alexis Littre (1698-1726), whose name is commemorated in "Littre's hernia" and "glands."

1802-1845.—John Houston. Irish surgeon. Curator of the Dublin College of Surgeons Museum of which he published an accurate and graphic catalogue. Surgeon to the City of Dublin Hospital and lecturer on surgery. Author of a book on dropsy, and various other works. The "valves of Houston" in the rectum were described by him.

1802-1880.—Sir Dominic Corrigan. Irish physician who practised in Dublin. He wrote on diseases of

the heart; described aortic insufficiency and gave his name to "Corrigan's pulse."

1802-1880.—William Sharpey. M.D. of Edinburgh. Professor of anatomy and physiology at University College, London. One of the founders of modern physiology in England. Amongst his pupils were Michael Foster and Burdon Sanderson.

1803-1873.—Justus von Liebig. German chemist and professor of chemistry at Giessen, 1824. Founder of agricultural chemistry and pioneer in physiological chemistry. He discovered hippuric acid and chloral and did important work on fats, blood and meat juice. He perfected the method of analysing organic compounds and discovered chloroform and many cyanides. He also established the formula of uric acid and the nature of aldehyde. His investigations concerning the operations of agriculture, the processes of digestion, and the source of animal heat, have proved of great service to mankind. In his work on organic chemistry in its application to physiology and pathology, published in 1842, he first introduced the word metabolism. His theory of fermentation was demolished by Pasteur.

1804-1873.—Peter Charles Huguier. Professor of anatomy at the École des Beaux Arts, Paris. He annotated and enlarged the work of Bichat.

He finally applied himself to gynæcology. The canal through which the chorda tympani emerges from the skull bears his name.

1804-1876.—**Georg Friedrich Louis Stromeyer.** Orthopædic surgeon. Surgeon-general of the Hanoverian Army, 1854. Was present at the battle of Sedan, 1870. One of the founders of the modern school of orthopædic surgery.

1804-1878.—**John Hilton.** Surgeon to Guy's Hospital. President of the Royal College of Surgeons of England. Surgeon to Queen Victoria. Was influenced by the discoveries of Bell and Marshall Hall. The great exponent, in his work on "Rest and Pain," of treatment by physiological rest. He laid much stress on the necessity of combining a knowledge of the anatomy and physiology of the nerves with surgical treatment.

1804-1878.—**Sir William Stokes.** Regius professor of medicine in Trinity College, Dublin, and one of the great ornaments of the Irish medical school. His name is associated with an explanation in 1848 of the respiratory cycle observed by John Cheyne, and with the Stokes-Adams syndrome. He published four cases of heart block in 1846, but it had already been observed by Thomas Spens of Edinburgh, 1763-1842.

1804-1881.—**Matthias Jakob Schleiden.** Professor of botany at Jena, Dresden and Dorpat; an

exponent of the cellular structure of plants. Was one of the first to use the microscope in examining plants.

1804-1892.—Sir Richard Owen. Comparative anatomist. Born at Lancaster; studied in Edinburgh. Was conservator of the Hunterian collection at the Royal College of Surgeons of England, and was afterwards superintendent of the Natural History Department of the British Museum. He is best remembered by his vertebral theory of the skull which was demolished by Parker and Huxley.

1805-1884.—Samuel David Gross. Professor of surgery at Louisville and Philadelphia. Author of the first exhaustive treatise on pathological anatomy in English, 1839. He also published a work on the diseases of the genito-urinary organs, 1851; the first systematic treatise on foreign bodies in the air-passages, 1854, and a system of surgery, 1859. He invented several instruments and wrote many historical and biographical papers.

1806-1865.—Joseph François Malgaigne. French surgeon. He published a treatise on surgical anatomy and experimental surgery in two volumes in 1838. He is remembered by "Malgaigne's hooks," which were used in the treatment of fractured patellæ. He published an edition of Ambroise Paré's works in 1840.

1806-1875.—Guillaume Benjamin Amand Duchenne, of Boulogne. One of the founders of modern neurology. He described bulbar paralysis in 1860, and his name is commemorated in medicine in connection with "Duchenne's palsy."

1807-1873.—Auguste Nélaton. Professor of surgery, Paris. Surgeon to Napoleon III. Wrote besides other works "Elements of Pathological Surgery," in five volumes. He is remembered in surgery by "Nélaton's line" and "sphincter" and by a bullet probe he invented.

1807-1878.—Antoine Pierre Ernest Bazin. French physician. Professor of dermatology and physician to the Hospital of St. Louis. "Bazin's disease" commemorates his name.

1808-1875.—Joachim Albin Cardozo Cazado Giraldès. Born at Oporto. Professor of anatomy in Paris. Published studies in anatomy, and described the organ which bears his name in 1859.

1808-1877.—Sir William Fergusson. Serjeant-surgeon to Queen Victoria. Author of "System of Practical Surgery," 1842. Was one of the first surgeons to remove the upper jaw.

1809-1872.—William Wood Gerhard. American physician. Differentiated between typhus and typhoid fevers, the distinction was finally made in England by Sir W. Jenner, 1849-50.

1809-1882.—Charles Robert Darwin. Pioneer in the study of general biology. Although the idea

of evolution was known to the Greeks, he established the theory and devoted the greater part of his life to his great work on the "Origin of Species by means of Natural Selection," 1859. This work and "The Descent of Man," published in 1871, gave him a place among the great thinkers of his century.

1809-1884.—Sir William James Erasmus Wilson. Dermatologist and founder of the Chair of Dermatology at the Royal College of Surgeons, also founder of the Chair of Pathology at the University of Aberdeen. Wrote several works on diseases of the skin. Was instrumental in bringing Cleopatra's Needle from Egypt to London, and had it erected on the Thames Embankment.

1809-1894.—Oliver Wendell Holmes. — Anatomist and author. Professor of anatomy at Harvard. He is best known for his poems and charming writings. In 1843 he wrote a paper on the Contagiousness of Puerperal Fever, which attracted much attention in the United States. He introduced the terms "anæsthesia" and "anæsthetic."

1809-1896.—Friedrich Gustav Jacob Henle. Anatomist and histologist. Pupil of Johannes Müller. Professor of anatomy at Zürich, Heidelberg and Göttingen. His name is commemorated

in several anatomical structures, as in "Henle's loop" in the renal tubules, and "Henle's layer" in the hair sheath.

1810-1859.—Jacob Bell. Pharmacist of London. Founder of the Pharmaceutical Society of Great Britain, 1841, which was incorporated by Royal Charter in 1843.

1810-1882.—Theodore Schwann. Professor of anatomy at Louvain. The founder of the cell theory. A brilliant cytologist. Did fundamental work on the form and physiology of the cell and of bile. He compared plant and animal cells and described the origin of tissues from cells. Applied the microscope to the elucidation of the structure of animal tissues and showed that yeast fermentation was due to a vegetable germ which fed itself on sugar and formed alcohol.

1810-1892.—Jean Louis Armand Quatrefages de Bréau. Professor of anatomy and ethnology at the Natural History Museum, Paris. Zoologist and anthropologist. Worked with Milne-Edwards at physiological morphology. An exponent of the theory of the polyphyletic origin of man.

1810-1896.—Marie Philibert Constant Sappey. Professor of descriptive anatomy in Paris. Author of various anatomical works, especially on the lymphatic system. His "Traité d'Anatomie"

in four volumes is illustrated with fine steel engravings.

1811-1870.—Sir James Young Simpson.—Gynæcologist and archæologist. Professor of obstetrics at Edinburgh. First to use chloroform as an anæsthetic in midwifery practice. Introduced acupressure, 1847, and the uterine sound into medical practice, 1843. He originated a type of midwifery forceps, and introduced the sponge tent, for dilatation of the cervix uteri in diagnosis. "Simpson's pains" in uterine cancer, 1863, and version in deformed pelves are associated with his name.

1811-1895.—Andrew Verga. Alienist. Director of the Ospedale Maggiore in Milan. Did much to improve the treatment of those mentally afflicted in Italy. Described his "ventricle" in 1851.

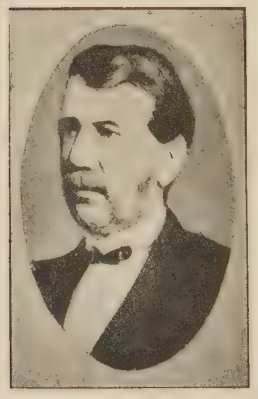
1812-1875.—John Hughes Bennett. Studied in Germany, Paris and Edinburgh. Became lecturer on histology in Edinburgh, 1841, and was the first to hold classes to teach students the use of the microscope. Professor of Institutes of edicine 1848. While still a student he wrote "On

the Anatomy and Physiology of the Optic Ganglions." He edited the *Edinburgh Monthly Journal of Medical Science* for many years.

1812-1883.—Philip Pacini. Professor of anatomy at Pisa and Florence. Employed the microscope to elucidate the cause of disease, and recognized the micro-organism of cholera. He investigated the electric organ of Gymnotus, and his name is commemorated in the Pacinian corpuscles of the skin.

1813-1833.—James Marion Sims. American surgeon. Practised in New York, where he was instrumental in founding a hospital for the diseases of women. Inventor of the well-known speculum.

1813-1873.—David Livingstone. Medical missionary and explorer. Born at Blantyre, near Glasgow. Studied at Anderson College, Glasgow, and graduated as Licentiate of the Faculty of Physicians and Surgeons, Glasgow, 1840. Practised as medical missionary among the Bechuanas of South Africa from 1840-1849. He discovered Lake Ngami in 1849 and explored the Zambesi and Kuanza basins to Loanda, 1851-54. He recrossed the continent from Loanda to Kilimane, and discovered the Victoria Falls in 1855. He after



wards discovered Lakes Shirwa and Nyassa, 1850-59, and Lakes Tanganyika, Moero and Bangweolo in 1867-1868. He navigated the Tanganyika, being driven back by the Manyema, and was relieved by Stanley in 1871. He returned to Lake Bangweolo and after enduring great hardships succumbed to an attack of dysentery and died at Chitambo.

1814-1867.—John Goodsir. Scottish anatomist and professor of anatomy at Edinburgh. He obtained distinction from his investigations in cellular pathology. His volume of "Anatomical Memoirs" was published in 1868. He was one of the great and inspiring teachers of the Edinburgh medical school.

1814-1876.—Francis Sibson. M.D.Lond. Physician to St. Mary's Hospital in 1851. He wrote "On Changes induced in the situation and structure of the internal organs under varying circumstances of Health and Disease," 1844. Between 1855 and 1869 he also published in sections his "Medical Anatomy." He gave his name to the fascial diaphragm over the apex of the lung.

1814-1878.—Claude Bernard. Born at St. Julien, France. Experimental physiologist and pathologist. A pupil of Magendie, whom he succeeded as professor of physiology at the Sorbonne in Paris. Investigated digestion of fat by the

aid of pancreatic juice, formation of sugar in the liver, and the vasomotor nerves.

1814-1894.—William Alexander Greenhill. Medical historian. Editor of Sydenham's works in 1844 and of the writings of Sir Thomas Browne. He translated Rhazes in 1847 and wrote many of the lives of physicians in Smith's Dictionary of Greek and Roman Biography. He died at Hastings where he had lived for many years.

1814-1899.—Sir James Paget. Serjeant Surgeon to Queen Victoria, physiologist and pathologist. Surgeon to St. Bartholomew's Hospital and President of the Royal College of Surgeons of England. Pathologist and investigator on the subject of tumours both clinically and microscopically. He published "Lectures on Tumours," 1851, "Surgical Pathology," 1863, "Clinical Lectures and Essays," 1875, and compiled the catalogue of the Pathological Museum of the Royal College of Surgeons in 1882.

fl. **1840.—Crawford Williamson Long.** M.D. Pennsylvania. Claimed to be the first discoverer of ether anæsthesia. Performed the first operation

with a patient under its influence March 30, 1842.

1815.—Laënnec invented the stethoscope and originated mediate auscultation.

1815-1848.—Horace Wells.—Dental Surgeon of Hartford, Connecticut, U.S. First to use nitrous oxide gas as an anæsthetic in dentistry in 1844.

1815-1876.—Sir William Robert Wills Wilde.—Irish ophthalmic surgeon and archæologist. Founded and edited the *Dublin Quarterly Journal of Medical Science*. He was interested in antiquarian research, and also published topographical works and observations on ophthalmia and aural surgery. Father of Oscar Wilde.

1815-1877.—Karl Reinhold August Wunderlich. Professor of medicine in the University of Tübingen. The originator of modern clinical thermometry. He published his treatise on the relation of animal heat in disease in 1868.

1816-1872.—Charles Victor Daremberg. Medical historian. Librarian of the Académie de Médecine and of the Mazarin Library at Paris. He was the first professor of the history of medicine in the University of Paris, and gave lectures on the subject in the Collège de France.

1816-1880.—Ferdinand von Hebra, of Brunn. Founder of the histological school of dermatology. His classification of skin diseases (1845) was based

upon their pathological anatomy. He was the first to describe impetigo herpetiformis.

1816-1880.—Jacob Augustus Lockhart Clarke. Physician to the Hospital for the Paralysed and Epileptic. He carefully studied and illustrated some original microscopical work on the brain.

1816-1890.—Sir William Gull. Physician. One of the first to note the posterior spinal lesions in locomotor ataxia in 1856, and to differentiate typhoid fever. He described intermittent hæmoglobinuria (1866), and was a pioneer in the use of static electricity in the treatment of nervous diseases.

1816-1892.—Sir William Bowman. Physiologist and ophthalmic surgeon. He was one of the first in England to devote himself exclusively to ophthalmic surgery. His name is commemorated in anatomy by "Bowman's capsule" in the kidney and "Bowman's membrane" in the hair follicles.

1816-1895.—Charles William Ludwig. Professor of anatomy and physiology at Zürich, Vienna and Leipzig. Author of a manual of physiology and a memoir on the structure and movements of the ventricles of the heart. One of the great physiological teachers of his age.

1816.—Sir Thomas Longmore. Military surgeon. Director-General of the Army Medical Service. Pro-

fessor of military surgery at the Army Medical School at Chatham. Author of numerous treatises on military surgery and hygiene. Inventor of the first electric bullet-detector. He published "Richard Wiseman: A Biographical Study," in 1891.

1816-1904.—Sir John Simon. Epidemiologist. Surgeon to St. Thomas's Hospital and became medical officer to the Privy Council. Carried on the traditions of Sir Edwin Chadwick in regard to public health. He wrote "English Sanitary Institutions," a history of public health from the earliest times.

1817-1894.—August Hirsch. Medical bibliographer and epidemiologist; educated at Berlin, practised at Danzig. Wrote on the epidemiology of the plague, cholera, and malaria Edited, with Pagel, Gurlt's "Biographical Medical Lexicon" in six volumes 1884-1888.

1817-1894.—Edouard Brown-Séquard. Physiologist. Born in Mauritius of American father and French mother. Educated at Paris. Professor of the Institutes of Medicine at Richmond, Virginia. Returned to Paris, founded and edited the *Journal de Physiologie*. He became physician to the National Hospital for the Paralysed and Epileptic on its foundation in London in 1859. He returned to America as professor of the physiology and pathology of the nervous

system at Harvard in 1863, but returned to Paris in 1872. His name is more especially associated with the experimental production of epilepsy and the existence of vasomotor nerves.

1818-1865.—Ignaz Philipp Semmelweis, of Vienna. Obstetrician. He taught that puerperal fever was due to infection borne from the dissecting room, and was preventible. In 1847 he carried his teaching into practice by ordering his students to wash in a solution of chlorinated lime before making an examination in the labour wards of the Vienna Lying-in Hospital. He was appointed professor of midwifery at Budapest in 1855, but his views were bitterly opposed.

1818-1889.—Frans Cornelis Donders. Ophthalmologist. Teacher of anatomy, histology and physiology at the Military Medical School of Utrecht in 1847. He did much to advance the knowledge of colour vision and of errors in the refraction of the eye, and their treatment by spectacles. He improved Helmholtz's ophthalmoscope by making the central hole in the mirror.

1818-1892.—Henry Jacob Bigelow. Surgeon to the Massachusetts General Hospital and professor

of surgery at Harvard, U.S. He took an active part in the early anæsthetic experiments. He published his method of reducing dislocations of the shoulder in 1869.

1818-1897. — Sir Thomas Spencer Wells. Gynæcologist. Practised in London, 1854. Served in the Crimea as a naval surgeon and returned to England much less afraid of abdominal wounds than his contemporaries who had only civilian experience. In 1858 he began to perform ovariotomies in spite of great opposition. President of the Royal College of Surgeons. A baronetcy was conferred upon him in 1882.

1819-1868.—William Thomas Green Morton. Dentist of Charlton, Massachusetts, U.S. First used ether in 1846 to produce anæsthesia for dental operations, and on October 16, 1846, he administered it successfully in a case of congenital vascular tumour of the neck, operated upon by Dr. John Collins Warren in the Massachusetts General Hospital. Morton did not reveal the secret of the agent he used until November 1846, and called it "Letheon."

1819-1872.—Wenzel Treitz. Professor of pathological anatomy at Cracow and Prague. He described

his ligament in 1853, and wrote on retro-peritoneal hernia in 1856.

1819-1876.—Edmund A. Parkes. Epidemiologist. Appointed to the first Chair of Hygiene founded in England at the Army Medical School at Netley in 1860. Established the Parkes Museum of Hygiene. Author of "Manual of Practical Hygiene," 1864.

1819-1892.—Josef Ritter von Artha Hasner. Austrian ophthalmologist. Professor of ophthalmology at Prague. Published 1850 a work on the physiology and pathology of the lachrymal apparatus, describing the valve of the nasal duct which is called by his name. Editor of the *Prager med. Vierteljahrsschrift.*

1820-1875.—Hubert von Luschka. Professor of anatomy at Tübingen. Author of a human anatomy in three volumes and anatomical papers (1862-1867). The lateral foramina in the roof of the fourth ventricle are called by his name.

1820-1904.—Sir Henry Thompson. Surgeon and lithotomist. Performed lithotomy on the Emperor Napoleon III in 1873. Author of many works on pathology and treatment of the urethra.

1821-1890.—Gottlieb Friedrich Heinrich Küchenmeister. Parasitologist. Practised at Dresden and studied more especially the life-history of the tapeworm.

1821-1894.—Herman Ludwig Ferdinand von Helmholtz. Successively professor of pathology at Königsberg; of anatomy and physiology at Bonn; of physiology at Heidelberg, and of physics at Berlin. He wrote on the physiology of hearing and on physiological acoustics. He invented an ophthalmoscope in 1851 and completed the demonstration of the mechanism of accommodation in the eye.

1821-1898.—Carlo Giacomini. Professor of Turin University. Published his work on the hippocampus in 1833, describing the "bundle of Giacomini" in the olfactory tract.

1821-1902.—Rudolf Virchow. Professor of pathology at the University of Berlin. His work on Cellular Pathology published in 1858 had a marked influence on the pathological teaching of the nineteenth century. He was also a politician, an anthropologist and an archæologist. He edited the well-known *Virchow's Archiv* for pathological anatomy.

1822-1895.—Louis Pasteur. French chemist and scientist. Professor of physics at Dijon. Professor and Dean of the Faculty of Science at Lille, 1854. Professor at the Sorbonne. He commenced his famous researches on fermentation in the latter city. In 1865 he successfully investigated silkworm disease, and in 1877 he

commenced his work on anthrax, announcing in 1881 his discovery of a protective vaccine consisting of the attenuated virus. At the same time he investigated hydrophobia, commencing in 1884, under the authority of the French Government, his experiments on the cortex of rabid dogs. In 1885 he performed the first protective inoculation, which was successful. Towards the end of his life he inaugurated, in conjunction with Roux, who had been his assistant throughout, a series of researches on diphtheria which resulted in the discovery of the serum now so largely used. He was the founder of the science of bacteriology.

1824-1881.—Peter Paul Broca. French surgeon and anthropologist. Professor of clinical surgery at Paris. Published a descriptive anatomy, 1865, also various works on aphasia and cranio-cerebral topography.

1825-1893.—Jean-Martin Charcot. Physician to the Salpêtrière at Paris, with which his name is indissolubly connected. He was a great clinical teacher of neurology. His name is associated with the condition of the joints known as "Charcot's disease." He was also an artist of some ability, and studied medical history on its artistic side.

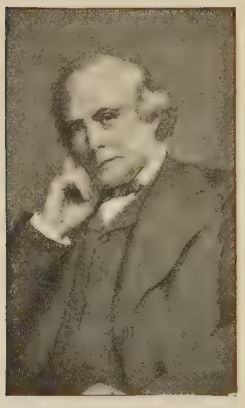
1825-1895.—Thomas Henry Huxley. Biologist. Lecturer on natural history at the Royal School of Mines

in London. The staunch advocate of Charles Darwin and a great popularizer of biological teaching in England.

1825 - 1895. — Ernest Félix Immanuel Hoppe-Seyler. Professor of chemistry at Strasburg. A pioneer in physiological chemistry. Editor of the *Zeitschrift für physiologische Chemie*, 1877-1894.

1826-1898.—Andreas Anagnostakis. Ophthalmic surgeon. Born in Crete. Was in general practice before he devoted himself to the study of ophthalmology. He became Professor of ophthalmology at the University of Athens, and published in 1872 "Contributions relating to Ophthalmic Surgery amongst the Ancients." He invented an ophthalmoscope while he was a student, but published no account of it until 1854. Helmholtz previously published an account of an instrument he had invented in 1851, which was modified by Donders, who made the central hole in the mirror.

1827 - 1900. — Richard Neale. M.D.London. Medical bibliographer. Whilst conducting a busy general practice in London for a period of fifty years he edited *The Medical Digest*, "a successor to Watt's Bibliotheca Britannica" and a predecessor of the "Index Medicus." A portrait of him hangs in the Royal College of Surgeons of England.



1827-1912.—Lord Lister (Joseph). Surgeon. Born at Upton, Essex. He became a student at University College, London, and graduated in 1852. He studied under and became assistant to Syme, and was appointed professor of surgery at Glasgow University in 1860. Here he commenced his investigations in connection with the use of antiseptics, which afterwards caused a revolution in surgery and proved of incalculable value to mankind. From his discoveries the present system of aseptic surgery developed. He communicated his successful results at a meeting of the British Medical Association in Dublin in 1867. He based his antiseptic teaching on the theory of putrefaction, and first used undiluted carbolic acid to destroy septic organisms in a case of compound fracture in Glasgow Infirmary in 1865. He was appointed professor of clinical surgery at King's College, London, in 1877, where he first used his carbolic spray. He was raised to the peerage in 1897, and died in London in 1912.

1828 - 1870. — Albrecht von Graefe. Professor of ophthalmic surgery in the University of Berlin, son of the surgeon Carl Ferdinand von Graefe

(1787-1840) and was a pupil of Arlt, Sichel, Desmarres, Von Jaeger, Bowman and Critchett. Founder of the *Archiv für Ophthalmologie* (1854). Invented the modern method of linear extraction of cataract. His name is associated with "Graefe's knife."

1828-1896.—**Sir Benjamin Ward Richardson**. Physician. Specialised in public health and dietetics. Published many works on these subjects, also on alcoholism and intemperance. Author of "Diseases of Modern Life," 1876, "National Health," 1890, "Vita Medica," 1897.

1828-1897.—**Etienne Tarnier**. French obstetrician. Introduced his first axis traction forceps for midwifery, 1877, of which there are several types, and was the first to use carbolic solution in obstetrics.

1829-1905.—**George Meissner**. German anatomist. A pupil of Joh. Müller. Professor of anatomy and physiology at Bâle and afterwards at Göttingen. Described his tactile corpuscles in 1852, and published in 1853 "Contributions to the anatomy and physiology of the skin."

1830-1914.—**Silas Weir Mitchell.** American neurologist who introduced a special method of treatment by rest and diet which is called after his name. He is known also as a poet and novelist.

1831-1897.—Alarik Frithiof Holmgren. Swedish physiologist. Professor of physiology in the University of Upsala. He worked especially on colour vision. His name is associated with "Holmgren's wools" which are used as tests for colour blindness.

1832-1919.—Sir William Crookes. Scientist and chemist. Pioneer in the investigation of phenomena shown by gases under greatly reduced pressure. He discovered thallium, a new metallic element, and in 1875 invented the radiometer. From his researches Radiography became possible.

1834-1907.—Dmitri Ivanovitsch Mendéleeff. Russian chemist and professor of chemistry in the University of Petrograd, 1866. In 1869 he first published his famous table. He was the first not only to formulate a general law connecting atomic weights with properties, but was also the first to indicate the character known as the law of periodicity.

1834-1919. — Ernst Heinrich Haeckel. Professor of zoology at Jena. The chief exponent of materialistic evolution. He held the position that the development of the individual is a condensed recapitulation of the development of the race, and made a complete list of the steps of evolution including many purely hypothetical forms.

1834-1863.—Otto Friedrich Karl Deiters. Pupil of Virchow at Berlin. His work on the medulla oblongata, published 1865, described the "nucleus of Deiters." He also wrote various papers on the Internal Ear.

1834-1911.—John Hughlings Jackson, M.D. Pioneer in the diagnosis and treatment of diseases of the nervous system. He was the first to establish the use of the ophthalmoscope in the diagnosis of diseases of the brain. His name is commemorated in the term "Jacksonian epilepsy," which he first described in 1875.

1835-1922.—Louis Ranvier. Professor of anatomy at the Collège de France. Published a treatise of histology, 1877-82. The "nodes of Ranvier" commemorate his name.

1836-1907.—Sir Michael Foster. Praelector of physiology at the University of Cambridge. Founder of the School of Cambridge physiologists, as represented by Martin, Gaskell, Langley and Lea. His textbook of Physiology passed through seven editions, and was translated into several languages.

1838-1896.—Edouard Nicaise, of Paris. Medical historian, Surgeon to the Hôpital Laënnec in Paris. He edited, with illuminating prefaces and notes, the works of Mondeville, Chauliac and Franco.

1838-1913.—John Shaw Billings. Medical bibliographer. He started and carried to a successful issue

with the help of **Robert Fletcher** (1823-1912) the great Index Catalogue of the Surgeon-General'sLibrary at Washington.

1838-1915.—George Miller Sternberg. Epidemiologist. Surgeon-General United States Army, 1893-1902. Creator of the Army Medical School and organizer of the Army Nursing Corps in the United States. Demonstrated the pneumococcus in 1880, put forward a theory of phagocytosis in 1881. He demonstrated the plasmodium in a malarial patient in 1885 for the first time in the United States. He also devoted much time to the study of yellow fever.

1839-1884.—Julius Friedrich Cohnheim. Professor of pathology at Kiel, 1868, and afterwards at Breslau and Leipzig. He wrote on tuberculosis, also on embolism, and published an "Introduction to General Pathology," 1877-1880.

1840-1910.—Joseph Frank Payne. Medical historian. Physician to St. Thomas' Hospital, London, where he devoted himself more especially to diseases of the skin. He did much by his writings and research to advance the study of medical history in England.

1840-1911.—Henry Pickering Bowditch. American physiologist. Founder of the physiological laboratory in the United States (1871). He did important work on the heart muscle, knee-jerk and nerve fatigue.

1841-1898.—Joseph O'Dwyer, of Cleveland, Ohio. Surgeon to the Foundling Hospital of New York. He perfected and brought into practical use the method of intubating the larynx as a substitute for tracheotomy. The first successful case was in 1884.

1842.—Long first used **ether** as an anæsthetic when operating.

1843-1910.—Robert Koch, M.D., of Göttingen. Bacteriologist. The originator of modern bacteriology by plate cultures about 1880. He discovered the tubercle bacillus in 1882 and the vibrio of cholera in 1883. He was afterwards professor of hygiene and bacteriology at the University of Berlin.

1844.—The Royal College of Veterinary Surgeons received its Charter.

1844-1922.—Sir Patrick Manson. "Father of Tropical Medicine in Great Britain." He studied at Aberdeen and Edinburgh Universities and shortly after coming of age accepted an appointment in the Island of Formosa. While in the East, from 1871 he began to study the diseases of the tropics and investigated the *Filaria bancrofti* and proved by experiments on his Chinese servant that the organism was carried to man by mosquitoes.

These investigations led to the study of the cause of malarial fever, of which he was eventually instrumental in discovering that mosquitoes were the carriers of the parasite of disease to man. During his career he contributed largely to the knowledge of many other tropical diseases and animal parasites. He founded the London School of Tropical Medicine.

1845-1915.—**Sir William Richard Gowers.** One of the founders of neurology. He worked on the minute anatomy of the nervous system as well as on the clinical aspects of disease.

1845-1916.—**Ilia (Elie) Metchnikoff.** Russian biologist and comparative embryologist. After teaching at Kieff and Odessa in Russia he settled in 1888 at the Institut Pasteur in Paris. With a lively imagination, he was also endowed with experimental ability and a most picturesque style of writing. He is best known for his theory of phagocytosis which led to the conception of immunity and serum-therapy.

1845-1922.—**Charles Louis Alphonse Laveran.** Parasitologist. Director of French Military Medical School at Val-de-Grâce, Paris, afterwards a pro-

fessor at the Institut Pasteur where he devoted himself to the study of parasitology. He was the first to observe the hæmatozoon in the blood of a patient suffering from malaria, on November 6, 1880. He studied the parasitic sporozoa of animals. Published the first edition of his treatise on malaria in 1898, and on trypanosomes in 1904. For 42 years he devoted all his energies to the study of pathogenic protozoa and their relation to disease in man and animals.

1845-1923.—Wilhelm Conrad von Röntgen, born in Rhenish Prussia. Educated in Holland and Switzerland. D.Sc. Zurich. Professor of physics at Würzburg. Discovered X-rays November 8, 1895, and communicated his discovery to the Physical Society at Würzburg, January, 1896.

1846.—Morton employed **ether** as an anæsthetic when extracting a tooth.

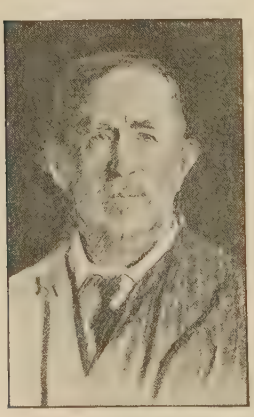
1846.—Liston employed **ether** for the first time in England as an anæsthetic in an operation for amputation of the thigh at University College Hospital.

1846-1901.—Alexander Kowalevsky. Russian morphologist. Professor at Petrograd. His work was a continuation of Rathke's. He made the development of amphioxus the key to vertebrate embryology, described the development of ascidians, and made many valuable discoveries. The neurenteric canal is sometimes called by his name.

1847.—Chloroform first used as an anæsthetic in obstetrics by Sir James Y. Simpson.

1847-1922.—Alexander Graham Bell. Physiologist and Inventor. Graduated at Edinburgh University, and University College, London. Emigrated to Canada, 1870, and subsequently became professor of physiology at Boston. He was the inventor of the telephone, gramophone and photophone and also devoted attention to the problem of flight, to the location of bullets and to the education of those born deaf.

1847-1922.—Sir Norman Moore, Bt. M.D.Camb. 1876. Physician to St. Bartholomew's Hospital, 1902-1911. Harveian Librarian from 1910-1922; President of the Royal College of Physicians from 1918-1922.



He devoted much of his life to the study of the history of medicine and by his teaching and scholarly works became one of the leaders who revived the interest in this subject in Great Britain. Through his influence the FitzPatrick

lectures on the history of medicine were established at the Royal College of Physicians and he delivered the first course in 1906.

He published "The History of Medicine in Ireland" 1910; "History of St. Bartholomew's Hospital" 1919, and was the author of many papers and lectures on historical medical subjects.

1849-1879.—Franz Christian Boll. Physiologist. Born at Neubrandenberg, he became assistant in du Bois-Reymond's institute at Berlin and was afterwards professor of physiology at Rome. He discovered the visual purple of the retina.

1849-1920.—Sir William Osler, Bt., M.D., F.R.S. Born in Canada, of English parents. He graduated at McGill University, Montreal, 1872. Afterwards studied in Glasgow, Edinburgh, Berlin and Vienna. Became professor of clinical medicine at the University of Pennsylvania, Philadelphia, and afterwards at Johns Hopkins University, Baltimore. Appointed Regius Professor of Medicine at Oxford, 1905. He was an inspiring teacher, a man of great personal charm, and was keenly interested in the study of the history of medicine. His "Principles and Practice of Medicine," 1892, became the standard textbook on the subject of which it treats.

1851-1912.—Julius Leopold Pagel. Medical historian. Studied and practised at Berlin. Translated

Sydenham's treatise on Gout into German. Edited (1901) a medical biographical lexicon. Was privat-docent of the history of medicine in the University of Berlin.

1851-1920.—Sir Peter J. Freyer. Surgeon in the Indian Medical Service, afterwards practised in London. He introduced the suprapubic operation for the removal of the prostate.

1852-1916.—Sir William Ramsay. Chemist and scientist. Professor of chemistry at University College, London, 1887. Discovered argon in 1894, helium 1895, also neon, krypton and xenon.

1852-1922.—William Stewart Halsted. Professor of surgery at Johns Hopkins University. Educated at Yale, Vienna, Leipzig and Würzburg. Chief exponent of the radical operation for amputation of the breast. Introduced the use of rubber gloves into surgery.

1854-1907.—James Carroll. Surgeon-major, U.S.A. Born at Woolwich, England. Entered the United States Army as a private and rose to the rank of hospital steward. He studied medicine and graduated M.D. at the University of Maryland, Baltimore, in 1891, and bacteriology at the Johns Hopkins University. Re-entered the U.S. Army as a commissioned officer and rose to the rank of major. Shares with Major Walter Reed, Dr. Jesse W. Lazear

and Dr. Agramonte the discovery of the transmission of yellow fever by the bite of the mosquito *Stegomyia fasciata*. Carroll demonstrated the cause by allowing himself to be inoculated experimentally on August 27, 1900. Dr. Lazear, who was also inoculated a week or two later, died of the disease.

1854-1915.—Paul Ehrlich. Hæmatologist, therapeutist and chemist. Director of the institute for experimental therapy at Frankfurt-on-Main. He was the founder of modern hæmatology and introduced the organic compounds of arsenic in the treatment of syphilis.

1854-1920.—William C. Gorgas. Surgeon-General in the United States Medical Service. Applied his knowledge to tropical disease successfully and freed Havana and Panama from yellow fever.

1855.—Manuel Garcia introduced the laryngoscope.

1856.—Sir William Perkin (1838-1907) first obtained aniline dyes from coal tar.

1860-1904.—Niels Finsen. Danish physician. Professor of anatomy at Copenhagen. He was always interested in research on the reaction of light on the tissues and in 1893 published his first essay on the value of red light in the treatment of smallpox. In 1895 he opened the Light Institute at Copenhagen and was awarded the Nobel prize for his contributions to light therapy.

1871-1906.—Fritz Schaudinn. Protozoologist. Studied at Berlin, and whilst working with Erich Hoffman discovered the *Spirochaeta pallida*, the causal organism of syphilis.

1872-1922.—Iwan Bloch. Syphilographer. Educated at Bonn, Heidelberg and Berlin. M.D. Würzburg. He published two valuable works on the origin of Syphilis in 1901 and 1910 to show that the disease was of recent origin in Europe and that there is no mention of it in the classical writers of antiquity.

1880.—Laveran discovers the parasite of malarial fever.

1882.—Koch discovers the tubercle bacillus.

1882.—Löffler discovers the bacillus of glanders.

1883.—Pasteur vaccinates against anthrax.

1883.—Koch discovers cholera bacillus.

1884.—Nicolaier discovers tetanus bacillus.

1885.—Pasteur inoculates for rabies.

1887.—Bruce discovers the bacillus of Malta fever.

1888.—Roux and Yersin investigate the toxins of diphtheria.

1888.—Institut Pasteur founded.

1890.—Behring treats diphtheria with antitoxin.

1894.—Kitasato and Yersin discover the plague bacillus.

1897.—Shiga discovers the dysentery bacillus.

1903.—Bruce demonstrates that sleeping sickness is transmitted by the tsetse-fly.

1905.—Schaudinn discovers the parasite of syphilis.

CHRONOLOGICAL REVIEW

OF THE

DISCOVERY AND INTRODUCTION OF SOME DRUGS AND REMEDIAL AGENTS EMPLOYED IN MEDICINE.

ANTIQUITY.

SULPHUR. Used from an unknown period of antiquity.

SODIUM CHLORIDE
TURPENTINE } Were used at a period of great antiquity.

ALUM and **OLIBANUM.** Used by the ancient Egyptians and the early Hebrews.

POMEGRANATE. Used by Egyptians and Assyrians, ca. 2500 B.C.

SOAP. Known to the Babylonians 2500 B.C. Mentioned by Pliny.

OPIUM. Used by the Egyptians, ca. 2500 B.C.

HEMLOCK. Mentioned in Egyptian papyrus, ca. 2300 B.C.

MYRRH. Used by the Egyptians, 2000 B.C.

ALOES
MANDRAGORA
LEAD SULPHATE
PEPPERMINT } Used by ancient Egyptians, mentioned in Papyrus Ebers, ca. 1500 B.C.

NATRON (SODIUM CARBONATE)
CASTOR OIL
RED LEAD
COPPER OXYACETATE
CALAMINE
CORIANDER

Used by ancient Egyptians, mentioned in Papyrus Ebers about 1500 B.C.

OX GALL. Used ca. 1500 B.C.

ANTIMONY SULPHIDE. Known ca. 1500 B.C.

AMMONIUM CHLORIDE. Mentioned by Herodotus.

MERCURY. Mentioned by Aristotle, 400 B.C. Termed by Theophrastus ca. 300 B.C. 'Liquid Silver.'

SCAMMONY. Described by Theophrastus, 300 B.C. Known to Hippocrates, 5th century B.C.

VINEGAR. Mentioned by Hippocrates.

ALUM. Known to Hippocrates, 5th century B.C.

ORPIMENT (yellow sulphuret of arsenic). Known to Hippocrates, 5th century B.C.

ACONITE. Known to the ancient Greeks as a poison B.C. 300-400.

LIQUORICE ROOT. Mentioned by Theophrastus, ca. 300 B.C.

CLOVES. Known to the Chinese ca. 266 B.C.

ZINC OXIDE. Known to the ancient Greeks by the names of "cadmia" or "pompholix," but called by the alchemists "lana philosophica."

COPPER SULPHATE. Known to the ancient Greeks as "Chalcanthum" and by the Romans as "Atramentum sutorium." Its nature is described by Basil Valentine, and the method of preparation by Van Helmont in 1644, and by Glauber in 1684.

CREAM OF TARTAR (crude) was known to the ancient Greeks and Romans as "faex vini."

DIACHYLON PLASTER. First mentioned by Pliny, ca. A.D. 50.

AMMONIACUM
MALE FERN
COLCHICUM
VALERIAN
} Described by Dioscorides ca. A.D. 40.

POTASSIUM CARBONATE. Mentioned by Dioscorides, ca. A.D. 40.

REALGAR (red sulphuret of arsenic). Used by the Greeks in the time of Dioscorides, ca. A.D. 40.

CAMPHOR. Introduced into Europe in the sixth century.

ARAB PERIOD.

SALTPETRE. Described by Geber in the eighth century.

NITRIC ACID
ARSENIOUS ACID
} Known to Geber in the eighth century.

SULPHURIC ACID. First mentioned by Geber in the eighth century.

MERCURIC CHLORIDE. Known to Rhazes and Avicenna.

POTASSIUM NITRATE
CORROSIVE SUBLIMATE
} Described by Geber, ca. A.D. 750.

SILVER NITRATE. Known to Geber, but not used in medicine until the seventeenth century, when it was introduced by Angele Sala as "Magisterium argenti" or "Crystal Diana."

SENNA LEAVES. Known to Serapion the Elder, ninth to tenth century.

NUX VOMICA. Known to the Arabs in the eleventh century. Introduced into England in 1540.

MEDIÆVAL PERIOD XIII-XVII CENTURY.

ALCOHOL. Prepared by Raymond Lully in the thirteenth century.

AMMONIUM CARBONATE. Prepared by Raymond Lully from urine in the thirteenth century.

AMMONIATED MERCURY. Known to Raymond Lully.

CALOMEL. Known in the thirteenth century. Probably took its name from a famous Italian chemist of Ferrara. Is also said to have been named by Torquet de Mayerne in honour of his young negro assistant. It was formerly known as mercurius dulcis, and the name calomel was originally given to the black sulphuret of mercury.

POTASSIUM SULPHATE. Known to Isaac of Holland in the fourteenth century and is described by Croll in 1608 as "Specificum purgans Paracelsi."

ZINC SULPHATE
FERRIC CHLORIDE
SPIRIT OF NITROUS ETHER
} Known to Basil Valentine in the fifteenth century.

BELLADONNA. First mentioned about 1504.

CATECHU. Described by Barbosa in 1514.

ÆTHER was discovered by Valerius Cordus about 1540 and known as "Oleum vitrioli dulce." It was rediscovered by Frobenius, a London apothecary, about 1730.

JALAP. Introduced into Europe from Mexico ca. 1550.

BALSAM OF PERU
BALSAM OF TOLU
} Introduced into Europe by Monardes in 1565 and 1574.

IPECACUANHA
COPAIBA BALSAM
} Brought to Europe by the Portuguese from Brazil, 1570. Ipecacuanha is mentioned by Purchas in "His Pilgrims," 1625.

HYDROCHLORIC ACID. First known as "royal water." Glauber prepared it by distillation of sodium chloride and sulphuric acid (ca. 1650), it being known then as "Spiritus fumans Glauberi."

LEAD ACETATE. Known to Geber in eighth century, but it was not employed in medicine until 1760, when Goulard recommended it in the form of "Aqua Vegeto mineralis Goulardi."

GUAIACUM. Introduced into Europe from St. Domingo in 1509. It was known as "The Wood."

BENZOIC ACID. Known in 1608.

TARTARATED ANTIMONY was prepared by Mynsicht in 1631.

ZINC CHLORIDE was described by Glauber in 1648, and known as "Oleum lapidis calaminaris."

SODIUM SULPHATE. First prepared by Glauber in 1658 and still known as "Glauber's Salt."

POTASSIUM PERMANGANATE was discovered by Glauber, but its composition was not known until described by Mitscherlich in 1630. Scheele renamed it "Chamæleon minerale."

AMMONIUM ACETATE was introduced by Minderer, and still bears his name.

PHOSPHORUS was discovered in the urine by Brandt about 1650, and Gahn and Scheele demonstrated it in bones in 1768 and 1771.

BORAX was introduced into commerce by the Venetians in the seventeenth century.

SODIUM POTASSIUM TARTRATE. Introduced into medicine by Seignette, an apothecary of Rochelle in 1672. It is still known as "Rochelle Salts."

MAGNESIUM SULPHATE. Described in 1694 by Nehemiah Grew in a mineral spring at Epsom, whence the name "Epsom Salts."

MAGNESIA CARBONATE. First introduced as a secret remedy under the name of "Magnesia alba" in the early part of the seventeenth century. The method of preparation was published by Valentine in 1707.

CINCHONA or PERUVIAN BARK. Introduced into Europe from South America by the Countess Cinchon in 1640.

EIGHTEENTH CENTURY.

BORIC ACID was made and introduced by Homberg in 1702, and known as "Sal sedativum Hombergi."

THYMOL. First prepared by Neumann in 1719.

CHLORINE. Discovered by Scheele in 1744 and known as "dephlogisticated muriatic acid."

PHOSPHORIC ACID was introduced by Marggraf in 1746.

CALCINED MAGNESIA. Introduced by Black in 1755.

ACETIC ÆTHER. First prepared by Lauragois in 1759.

TARTARIC ACID. First prepared by Scheele in 1768.

GLYCERIN. Discovered by Scheele when preparing diachylon plaster in 1779 and called "the sweet principle of oils."

LACTIC ACID. First prepared by Scheele in 1780.

PRUSSIC ACID. Discovered by Scheele in 1782.

CITRIC ACID. First prepared by Scheele in 1784.

BISMUTH SUBNITRATE. First employed by Odier in 1786.

GALLIC ACID. First prepared by Scheele in 1785.

POTASSIUM CHLORATE. First prepared by Berthollet in 1787 and known as "sel de Berthollet."

CHROMIC ACID. Introduced by Vauquelin, 1797.

NINETEENTH CENTURY.

NARCOTINE. Discovered by Derosne, 1803.

MORPHINE. Discovered by Sertürner in 1804.

CANTHARIDIN. Discovered by Robiquet, 1810.

TANNIC ACID. First prepared by Berzelius ca. 1810.

CERIUM. Discovered by Klaproth ca. 1810.

IODINE. First extracted from seaweed by Courtois in 1811.

NAPHTHALINE. Discovered by Garden, 1816.

EMETINE. Discovered by Pelletier, 1816.

HYDROGEN PEROXIDE. Discovered by Thénard, 1818.

STRYCHNINE. Discovered by Pelletier and Caventou, 1818.

VERATRINE. Discovered by Meissner, 1818.

BRUCIN. Discovered by Pelletier and Caventou, 1819.

PICROTOXINE. Discovered by Van Boullay, 1820.

QUININE
CINCHONINE
COLCHICINE
} Discovered by Pelletier and Caventou, 1820.

CAFFEINE. Discovered by Runge, 1820.

POTASSIUM IODIDE. Introduced into medicine in 1821 by Coindet.

THEBAINE. Discovered by Pelletier, 1822 (?).

IODOFORM. First prepared by Serullas in 1822. The first synthetic remedy used in medicine in 1837.

BROMINE
POTASSIUM BROMIDE
} Discovered by Balard in 1826.

MECONIN. Discovered by Dublanc, 1826.

NICOTINE. Discovered by Posselt and Reimann, 1828.

QUINIDINE. Discovered by Sertürner, 1828, and Van Hejningen, 1849.

SANTONIN. Discovered by Kahlet and Alms in 1830.

ATROPINE. First isolated by Mein in 1831.

CHLOROFORM. First prepared by Guthrie, of America, in 1831 and known as "chloric ether." Named chloroform by Dumas in 1834, who first worked out the real formula. First used as an anæsthetic in midwifery by Simpson in 1847.

CHLORAL HYDRATE Discovered by Liebig in 1832 and introduced into medical practice by Liebreich in 1869.

CODEINE. First isolated by Robiquet in 1832.

NARCEINE. Discovered by Pelletier, 1832.

CREOSOTE. Discovered by Reichenbach in 1833.

HYOSCYAMINE. Discovered by Geiger and Hesse, 1833.

PHENOL and **ANILINE.** Discovered in coal tar by Runge in 1834.

PEPSINE. First prepared by Schwann in 1836.

SALICYLIC ACID. Discovered by Kolbe in 1839 and introduced as an antiseptic in 1874.

SODIUM BICARBONATE. Introduced by Bullrich, 1841.

THEOBROMINE. Discovered by Woskresensky, 1841.

CINCHONIDINE SULPHATE. Discovered by Winckler, 1847; Pasteur, 1853.

PAPAVERINE. Discovered by Merck, 1850.

ALOIN. Discovered by T. and H. Smith, 1850.

ACETANILIDE. Discovered by Gerhardt in 1853, introduced into medicine in 1886.

COCAINE. Isolated by Gaedecke in 1855 and first called ethroxylene. Introduced into medicine by Koller, 1884.

PHYSOSTIGMINE. Discovered by Jobst and Hesse in 1864.

RESORCIN. First prepared by Barth and Hiaswetz in 1864.

CRYPTOPINE. Discovered by T. and H. Smith, 1864.

FORMALDEHYDE. Discovered by Hofmann in 1867.

APOMORPHINE. Discovered by Mathieson and Wright, 1869.

GELSEMINIA. Discovered by Wormley, 1870; Gerrard, 1883.

SODIUM SALICYLATE. First prepared syntheticly by Kolbe in 1875.

PILOCARPINE. Isolated by Gerrard in 1875.

GNOSCOPINE. Discovered by T. and H. Smith, 1878.

SACCHARINE. Discovered by Falberg in 1878.

PIPERINE. Discovered by Oersted.

NARCISSINE. Discovered by Gerrard, 1878; Ewins, 1910.

NAPHTHOL. Discovered by Gerrard, 1878; Ewins, 1881.

HOMATROPINE. Discovered by Ladenburg, 1879.

XANTHALINE. Discovered by T. and H. Smith, 1881.

ANTIPYRINE. Discovered by Knorr in 1884.

PHENACETIN. Discovered 1887.

SULPHONAL. Discovered by Baumann 1888.

d'HYOSCYAMINE D'CAMPHORSULPHONATE. Discovered by Ladenburg and Hundt, 1889; Barrowcliff and Tutin, 1909.

CEPHAELINE HYDROCHLORIDE. Discovered by Paul and Cownley, 1894.

PSYCHOTRINE. Discovered by Paul and Cownley, 1894.

d'HYOSCINE HYDROBROMIDE. Discovered by Tutin, 1900; King, 1919.

PRINCIPAL UNIVERSITIES AND SCHOOLS OF MEDICINE WITH THE APPROXIMATE DATES OF THEIR FOUNDATION.

B.C. **522.**—Athens, Medical School.

A.D. **529.**—Monte Cassino, monastery founded.

738.—Montpellier, School of.

848.—Salerno, School of, first mentioned.

980.—Cordova, Spain.

1025.—Parma, University of.

1110-13.—Paris and Bologna, Universities founded.

1145.—Rheims.

1167.—Migration of students from Paris to Oxford to form a "Studium generale."

1204.—Vicenza, University founded by migration of students from Bologna.

1205.—Paris, Faculty of Medicine.

1209.—Cambridge inhabited by migration of students from Oxford.

1209.—Valencia, Spain.

1213.—Salerno, University founded by Frederick II.

1214.—Palencia, University of, founded by Alfonso VIII.

1215.—Arezzo.

1222.—Padua, University founded by migration from Bologna.

1224.—Messina, University founded by Frederick II.

1225.—Naples, University founded by Frederick II.

1230.—Salamanca.

1231.—Orléans.

1233.—Toulouse, France.

1241.—Siena, University of.

1243.—Salamanca, University of, founded by Ferdinand III of Castille.

1248.—Piacenza, University of, founded by Papal Charter.

1250.—Valladolid, Spain.

1254.—Seville, University of, founded by Alfonso the Wise.

1257.—Sorbonne, founded at Paris.

1266.—Perugia, University of, founded.

1290.—Lisbon, Portugal.

1300.—Lerida, University founded by James II of Spain.

1303.—Avignon, University of, chartered by Boniface VIII.

1303.—Rome, University of, chartered by Boniface VIII.

1305.—Orleans and Angers, Universities of, chartered by Clement V.

1306.—Perugia.

1309.—Coimbra, Portugal, University of, chartered by King Diniz of Portugal.

1312.—Palermo, University of, founded.

1318.—Treviso, University of, chartered by Frederick the Fair.

1320.—Florence, University of, founded.

1332.—Cahors, University of, chartered by John XXII.

1338.—Pisa, University of, founded by emigration of students.

1339.—Grenoble, University of, chartered by Benedict XII.

1343.—Cracow, Poland.

1347.—Prague, University of, chartered by Clement VI.

1349.—Perpignan, founded by Clement VI.

1354.—Huesca, University of, founded by Pedro IV.

1361.—Pavia, University of, chartered by Charles IV.

1364.—Vienna, University of, founded by Duke Rudolph IV.

1364.—Angers, France.

1365.—Orange, University of, founded by Charles IV.

1367.—Fünfkirchen, University of, founded by Louis of Hungary

1379.—Erfurt, University of, re-chartered by Urban VI.

1386.—Heidelberg, Germany.

1388.—Cologne, University of, chartered by Urban VI.

1389.—Budapest.

1391.—Ferrara, University of, chartered by Boniface IX.

1402.—Würtzburg, University of, chartered by Boniface IX.

1409.—Leipzig, University of, chartered by Alexander V.

1409.—Aix, France, Studium generale at.

1411.—St. Andrews, University of, founded by Bishop Henry Wardlaw.

1412.—Turin, University of, founded.

1419.—Rostock, University of, chartered by Martin V.

1422.—Parma, University of, founded.

1426.—Louvain, University of, founded.

1431.—Poitiers, University of, founded by Charles VII.

1433.—Florence, Italy.

1437.—Caën, University of, chartered by Eugenius IV.

1441.—Bordeaux, University of, founded.

1445.—Catania, Sicily, University of, chartered by Alfonso of Aragon.

1450.—Trèves, University of, founded.

1450.—Barcelona, University of, founded by Nicholas V.

1452.—Valence, University of, founded.

1453.—Glasgow, University of, founded.

1455.—Freiburg, University of, founded by Albrecht VI.

1456.—Greifswald, University of, founded by Calixtus III.

1459.—Ingolstadt, University of, founded by Pius II.

1460.—Basel, University of, founded.

1463.—Nantes chartered by Pius II.

1465.—Bourges.

1465.—Budapest, University of, founded by Paul III.

1474.—Saragossa, University of, founded.

1475.—Copenhagen, Denmark, chartered by Sixtus IV.

1476.—Upsala, Sweden.

1477.—Tübingen and Upsala, Universities of, founded.

1477.—Mayence.

1494.—Aberdeen, Scotland.

1499.—Toledo, Spain.

1499.—Alcala, University of, founded.

1502.—Wittenberg.

1504.—Santiago, Spain, University of, founded.

1506.—Frankfort on the Oder, University of, founded by Julius II.

1508.—Madrid, University of, founded.

1526.—Nuremberg.

1527.—Marburg, University of, founded by Philip, Landgrave of Hesse.

1531.—Granada, University of, founded by Clement VII.

1531.—Debreczen.

1544.—Königsberg.

1548.—Messina, Sicily.

1551.—Mexico.

1553.—Lima, University of, founded.

1558.—Jena, University of, chartered and opened by Ferdinand I.

1560.—Douai (Lille), University of, founded.

1565.—Milan.

1574.—Oviedo.

1575.—Leyden and Helmstädt, Universities of, founded.

1575.—Nuremberg moved to Altdorf.

1578.—Wilna.

1581.—Olmütz.

1582.—Edinburgh, University of, chartered by James VI.

1585.—Francker.

1586.—Graz, University of, founded.

1591.—Dublin, University, founded.

1596.—Barcelona, Spain.

1596.—Cagliari (Sardinia).

1600.—Harderwijk, Holland.

1614.—Groningen, University of, founded.

1616.—Paderborn, University of, founded.

1621.—Strassburg and Rinteln, University of, founded by Emperor Ferdinand II.

1623.—Salzburg, Austria, University of, founded.

1634.—Utrecht and Sassari, Universities of, founded.

1635.—Budapesth.

1636.—Harvard, University of, founded.

1640.—Åbo, Finland.

1648.—Bamberg, University of, founded.

1654.—Herborn, University of, founded.

1655.—Duisburg and Kiel, Universities of, founded.

1666.—Lund, University of, founded.

1671.—Urbino, University of, opened as "Studium generale."

1672.—Innsbruck, University of, founded by Emperor Leopold I.

1683.—Modena chartered.

1693.—Halle, University of, founded.

1701.—Yale College founded.

1702.—Breslau, University of, founded by Leopold I.

1721.—Caracas (Venezuela), University of, founded.

1722.—Dijon, University of, founded.

1727.—Camerino.

1734.—Göttingen, University of, founded by George II.

1740.—Pennsylvania, University of, founded as "College of Philadelphia."

1743.—Erlangen, University of, chartered and opened by Karl VII.

1743.—Santiago, Chile, University of, founded.

1746.—Princeton College founded.

1754.—Columbia, New York, King's College, founded.

1755.—Moscow, University of, founded by the Czarina Elizabeth.

1768.—New York Medical School founded.

1771.—Münster, University of, inaugurated.

1779.—Palermo, Sicily, University of, founded.

1781.—Georgetown, D.C., University of, founded.

1782.—Harvard University, Medical Department of, founded.

1784.—Lemberg.

1785.—Georgia, U.S.A., University of, founded.

1794.—Pesth, Hungary, founded by Paul II.

1802.—Ingoldstadt moved to Landshut.

1804.—Charkow.

1806.—Lausanne.

1808.—Lyons, University of, founded.

1808.—Clermont-Ferrand, University of, founded.

1809.—Berlin, University of, founded by Friedrich Wilhelm III of Prussia.

1811.—Christiania founded.

1811.—Salerno abolished.

1812.—Genoa, University of, founded

1816.—Ghent, University of, founded.

1817.—Liège, University of, founded.

1818.—Bonn, University of, re-established by Friedrich Wilhelm III of Prussia.

1819.—St. Petersburg, University of, founded by Alexander I.

1821.—McGill College and University founded at Montreal.

1825.—Virginia, University of, founded.

1826.—Munich, University of, founded by removal of Ingolstadt from Landshut.

1826.—Åbo moved to Helsingfors.

1832.—Zürich and Kieff, Universities of, founded.

1834.—Berne, University of, founded.

1834.—Brussels, University of, founded.

1836.—London, University of, founded.

1838.—Messina, University of, founded.

1849.—Wisconsin, University of, founded.

1854.—Marseilles, University of, founded.

1857.—Chicago, University of, founded.

1860.—Jassy, Turkey.

1860.—California, University of, founded.

1865.—Odessa, University of, founded.

1868.—Tokyo, University of

1868.—Cornell, New York, University of, founded.

1875.—Czernowitz.

1876.—Geneva, University of, founded.

1877.—Amsterdam, University of, founded.

1888.—Tomsk, University of, founded.

1889.—Friburg, University of, founded.

1897.—Kioto, University of, founded.

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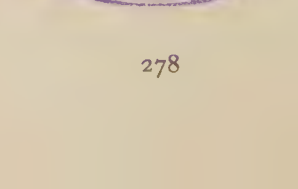

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